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American Engineer

IN THIS ISSUE . . .

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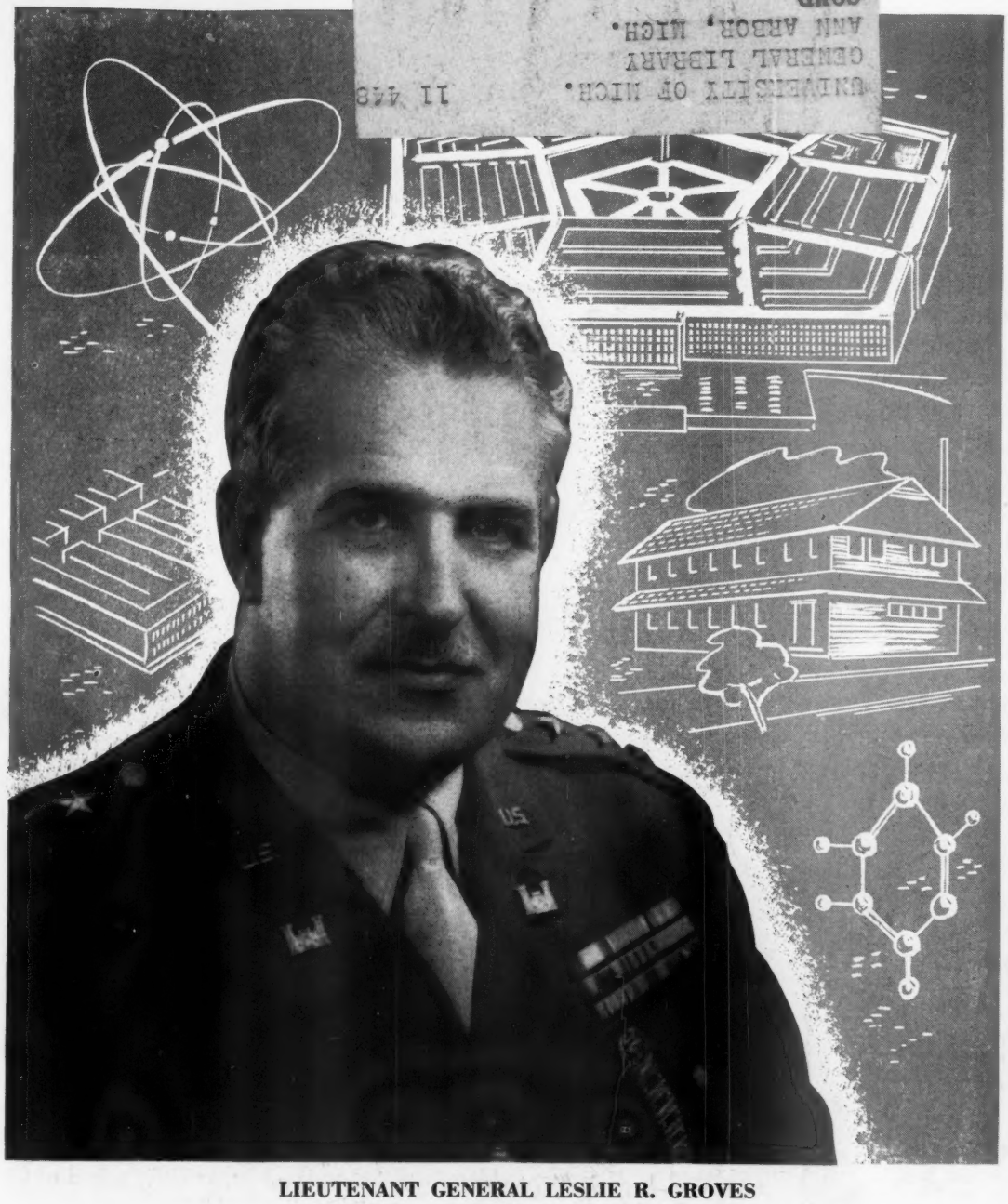

LIEUTENANT GENERAL LESLIE R. GROVES
The Engineers' Niche In An Atomic Age

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American Engineer

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"Let us develop the resources of our land, call forth its powers, build up its institutions, promote all its great interests, and see whether we also, in our day and generation, may not perform something worthy to be remembered."

—DANIEL WEBSTER

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• AN EDITORIAL •

Why Don't We Accentuate the Positive

We talked with an engineer recently who was on his way to a foreign country to carry out a mission for the State Department. The assignment was neither one of engineering nor politics but, of all things, diplomacy. Our friend was happy with the prospects of his new job, but distinctly bewildered by some of the things that had been happening to him since he accepted it. Initially, he was surprised at the awe-stricken expressions that graced the countenances of engineers who learned that he, a fellow engineer, was to be dispatched on duty involving top hats and conference tables. Then, to add to his perplexity, he found, to the converse, that layman acquaintances made no move to go into gales of laughter when his future plans were announced, but accepted his appointment as perfectly within the realm of logic. All this set the new diplomat and ex-engineer thinking, and he is now convinced the average engineer nurses a bit of an inferiority complex and with little reason for so doing. Moreover, he feels engineers are totally to blame for what professional status they lack, and that the public is willing to accept them as truly professional men any time they want to live up to the title.

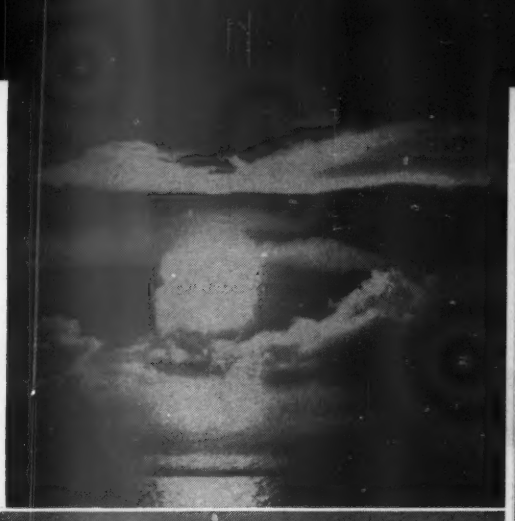
We think the man has a good point. Examine recent issues of the leading engineering magazines and you'll find articles galore with titles such as these: "Why Does The Engineer Lack Culture?"; "What's The Matter With Engineering Education?"; "Making Extroverts of Engineers," ad infinitum. Now, try and find stories about the past accomplishments and future plans of such engineers as Thomas E. Murray, new member of the Atomic Energy Commission. Or try and find something written that highlights great engineering thought and genius. Too often only a few skimpy news stories are to be unearthed.

But, even more important than the scarcity of information about things of magnitude, is the almost total lack of publicity of work being done by thousands of engineers in less spectacular niches. Our aforementioned diplomat is a case in point.

We are being told that the need for attracting young men to the profession is more acute than ever before if a shortage of engineers is to be avoided after 1954. Surely continuous adverse publicity is not helping the cause.

We all know too well the faults of the engineer and the profession. Many subscribe to the theory that the only method to be used in eradicating the weaknesses, is to hammer away at them constantly. Bring them out in the open, they say, and they will perish in the light. This, of course, is very sound thinking. On the other hand, have we gone too far? Has the profession today progressed to a point where some accentuating of the positive would now do just as much, if not more good? The engineer is told he is a poor salesman; that he must learn to sell himself and his work. Let's not go about it negatively. There isn't a salesman who ever sold anything by telling his customer what his product would *not* do. But the pros and cons are many. What are your thoughts on methods of selling the profession? We'd like to hear from you.

an
AMERICAN ENGINEER
interview
with . . .



☆ Lt. Gen. LESLIE R. GROVES

of atom bomb fame

As the officer who was in charge of the Manhattan Project during World War II, which developed the atomic bomb, Lieutenant General Leslie R. Groves added still another great accomplishment to a brilliant military career. This career began in 1918 when the young officer was commissioned a second lieutenant in the Corps of Engineers. He served with distinction in Europe, Hawaii, and in Nicaragua on special assignments. Promoted to captain in 1934, he attained his majority in 1940. He was selected over thousands of his seniors when he was given the rank of full colonel in November, 1940, and later appointed Deputy Chief of Construction in the Corps of Engineers. Beginning in 1940 he was the Chief of Operations on all military construction within the United States, including all camps, ordnance plants, port depots and the famous Pentagon Building in Washington. In the fall of 1942, when our government undertook atomic research in earnest, Colonel Groves was promoted to the rank of brigadier general and placed in charge and given complete responsibility for every phase of the enormous project which he named the Manhattan Engineer District. Less than three years later, the world's first atomic bomb exploded in New Mexico—and a few days later the war was over. After V.J. Day, General Groves continued to be in complete charge of the Atomic Bomb Project under the general direction of the Secretary of War. On January 1, 1947, he turned over his responsibilities to the newly established civilian Atomic Energy Commission.

General Groves was promoted to the rank of major general in 1944, and to lieutenant general in 1948. He has received many decorations from the United States and foreign countries, and honorary degrees from the University of California, and Lafayette, Williams, and Hobart Colleges.

Left: **Nagasaki atom blast.** ***Top:*** **Night photo at Eniwetok of fire ball after blast.**

This plant, built under the Manhattan Project, produced uranium 235 at Oak Ridge during the war.

As a distinguished engineer who has always had an intense interest in the profession, the AMERICAN ENGINEER secured the following interview with General Groves to obtain still another outstanding engineer's views on his profession and the men in it.

QUESTION: As you well know, General, NSPE devotes its entire effort to the professional, ethical and economic aspects of engineering. In other words, we do not concern ourselves with technical problems. Now, because we are concerned with professionalism, we are often disturbed by the apparent lack of engineers in public life. Would you care to comment on this?

Answer: There is no doubt that there are far too few engineers, scientists and other professional men taking their proper places in public life. Your society and others in similar work, should make continuing appeals to the engineering profession, urging the engineers to take an active interest in our political and social problems. We must stop leaving all the thinking to a few bright young men in the State Department, and to the professional politicians.

Question: General, as you know, the latest appointee to the Atomic Energy Commission was Thomas E. Murray, a professional engineer of New York. Do you think the appointment of Mr. Murray was a step in the right direction?

Answer: Yes, it certainly was. The appointment of a man with his professional background is to be heralded, but there are not enough such appointments to the right positions.

Question: How do you think we in the profession can best encourage our members to take a greater interest in public affairs?

Answer: The local community offers an excellent opportunity for one and all to be of public service. You don't have to be a great orator or a master politician in any sense of the word, to be a very worthwhile leader in civic affairs. There are many activities which offer a variation of appeals. With my military background I, naturally, cannot ignore those in the military sphere. Civil Defense is a very important field which needs outstanding leadership at the local level. No one is better qualified for this than engineers with military experience. Then, of course, engineer reserve officers in the Army can take an active interest in affairs of local military units, including the National Guard. Navy and Air Corps officers can do likewise. But the professional engineer can perform his civic duty in many other activities as well. There are excellent charitable organizations, youth groups, religious groups, and such fine community clubs as the Rotary, Lions and Kiwanis that offer ample opportunity for anyone to take an active interest in important matters.

Lt. Gen. Groves is shown during congressional inquiry into activities of Klaus Fuchs, British scientist. Sen. Brien McMahon is on left, and Rep. Carl T. Durham, on the right.

Question: Do you think the engineer is properly trained to be useful in such affairs?

Answer: The engineer is trained to be a man of integrity and dependability. He is usually an intelligent man. Any man with these attributes can be very useful, for he will lend weight to almost any endeavor.

Question: Many leaders in the engineering field claim that a more extensive education in the humanities would be of value to the engineer. In other words, many feel that the engineer does not have a well-rounded education. Do you think a broader curriculum which places less emphasis on technical subjects would better prepare the engineering graduate for the business and social world?

Answer: We will always have to compromise on that. There is not time enough now to instruct an engineering student in all the technical subjects he should know about. How can we sandwich in more courses in the humanities when there just isn't enough time to go around? On the other hand, we professional engineers are derelict in our duty if we do not make every attempt to improve the brand of education our youngsters are getting, so that they are better equipped to contribute more to the peace and happiness of the world. And incidentally to live fuller lives. A great deal can be done to improve this situation by the individual's confirming his study of the humanities by post graduate reading.

Question: Many outstanding engineers, General, claim that they can do more for the benefit of society by sticking to their technical work than by trying to become politicians and so forth. Would you care to comment on this?

Answer: If by that you mean taking an active part in public affairs, I do not agree at all. That would be shirking their public responsibilities. Years ago our leaders in high places only needed courage. Later to this we added integrity. Now, with great scientific and technical advances we need men with those two qualities plus intelligence. Who is better qualified by his training and experience than the professional engineer? Professional engineers and scientists gave much to the world when they introduced the atomic age. It is virtually impossible for the mind to visualize just what progress can be made in the future through the peaceful use of atomic energy. But I still feel that the technical man can be of great additional service to his country by taking a proper part in public affairs.

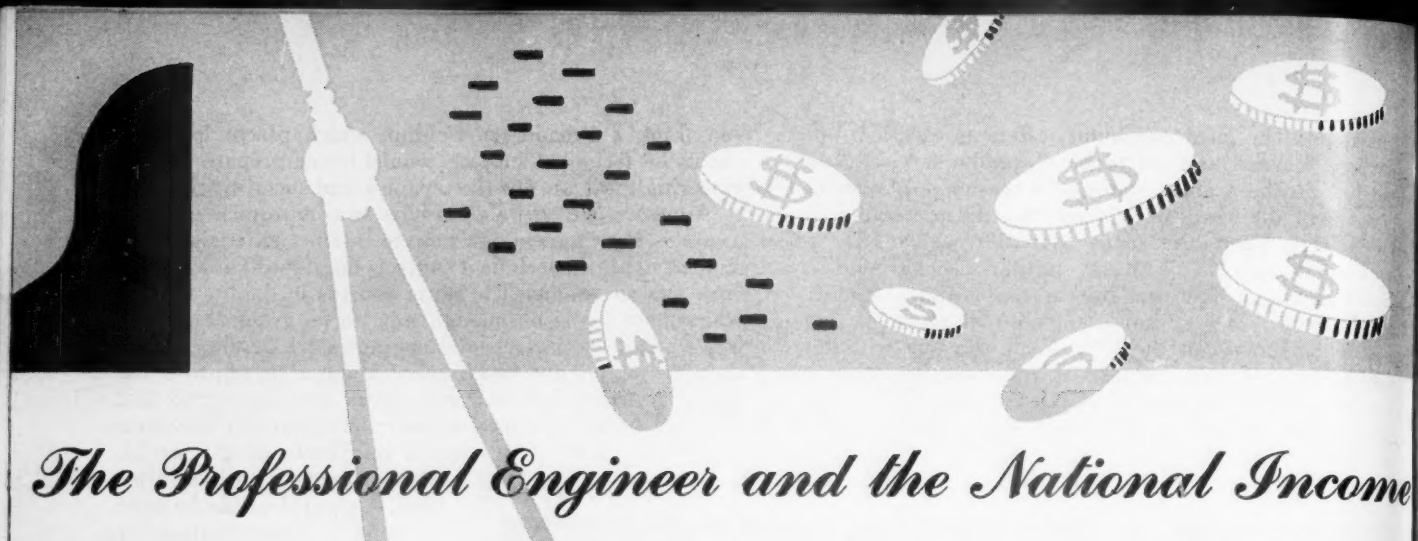
Question: You think it is a good idea, then, for the professional engineer to take an interest in what good or evil the world may make of his inventions?

Answer: I certainly do. He may be of service by staying in the laboratory, but he may be shunning his responsibility. We engineers must do our part in seeing that only the most competent people are appointed to positions having to do with such things as atomic energy. Where are the engineers and the scientists when appointments to jobs they should fill are made? They are too often not to be found.

Question: General, you said that the time is past due when professional engineers must take a more active part in directing our country's future. Would you amplify that?

Answer: It is time for intelligent thinking by all intelligent human beings. Take a look at the front page of

(*Continued on page* 34)



The Professional Engineer and the National Income

THE National Income and what happens to it are of vital concern to every man, woman and child in the United States. This is because it represents the total size of the "pie" to be distributed among them.

Next in importance to everyone is the manner in which the total income is distributed as between those whose pieces of the "pie" are large and others whose shares are smaller. Everyone, even the tiniest baby, gets some of it, even though the fact does not appear in the statistics.

Third in importance to everyone is the quantity of his share of the "pie" which is taken away from him by taxation.

To the professional engineer, as to everyone else, all those considerations have to do with his personal welfare. To him, however, there is an element of additional importance.

Production

The chief occupation of the professional engineer is the investigation, design and construction of projects which add to the productive wealth of the nation; which increase its capacity to produce the things by which our national standard of living is measured. For the accomplishment of all this the essential prerequisite is capital and investors to supply it.

Since it is a well recognized fact that the supply of capital comes from individuals in the higher income brackets, the well informed professional engineer will realize the importance of such a group, to him especially and to everyone else generally. He does not wish the higher bracket people to hog the show but he wants the show to go on.

In the words of a distinguished American of revered memory, let us, then, "take a look at the record." Because the record is immediately available for the years 1935 to 1948 inclusive, let us follow the line of least resistance and make some simple comparisons between the two extreme years. The reported total National Income for those years, in billions of dollars, and also expressed as index numbers, was as follows:

	Income	*Index*
1935	$56.8	100
1948	226.2	399

It is a fact of common knowledge, however, that the foregoing increase of almost 300 per cent is in great measure the result of higher prices and the reduced value of the dollar. Taking the wholesale commodity index, as published by the Bureau of Labor Statistics, as a reasonable basis we derive a comparison of 1948 with 1935 as follows:

	1926=100	*1935=100*
1935	80.0	100
1948	165.0	206

From the forgoing information, it is now possible to translate the dollars of National Income in the year 1948 into terms of an index of physical volume as follows:

Here Are Mr. Burnell's Ideas—What Do YOU Think?

	(A) Dollar Income	(B) Price Index	(C) Volume Index A/B
1935 ..	100	100	100
1948 ..	399	206	194

EVEN after the price adjustment the indicated volume increase of 94 per cent was substantial and it was reflected in the high rate of employment and business activity during 1948. Thus there is another factor to be considered, namely, the degree of that employment. From the Government statistics we have information as to the average number of employed individuals in the civilian labor force for all the years and also a basis for estimating the average hours of work per week. This latter information is limited to the manufacturing industries but is accepted, for the present purpose, as reasonably applicable to all employed labor. The comparison expressed in terms of labor hours and by index numbers is developed as follows:

	(A) Labor Force (Millions)	Labor Hours (B) Week	(C) Year	(D) Total (Billions) (A) x (C)	(E) Labor Hour Index
1935	42.3	36.6	1,900	80.4	100
1948	54.4	40.1	2,090	124.1	154

From the volume index of the National Income, expressed in terms of goods, related to the index of labor hours, we may now derive an hourly income index as follows:

	(A) Volume Index	(B) Labor Hour Index	(C) Hourly Income Index (A)/(B)
1935	100	100	100
1948	194	154	126

About The Author . . .

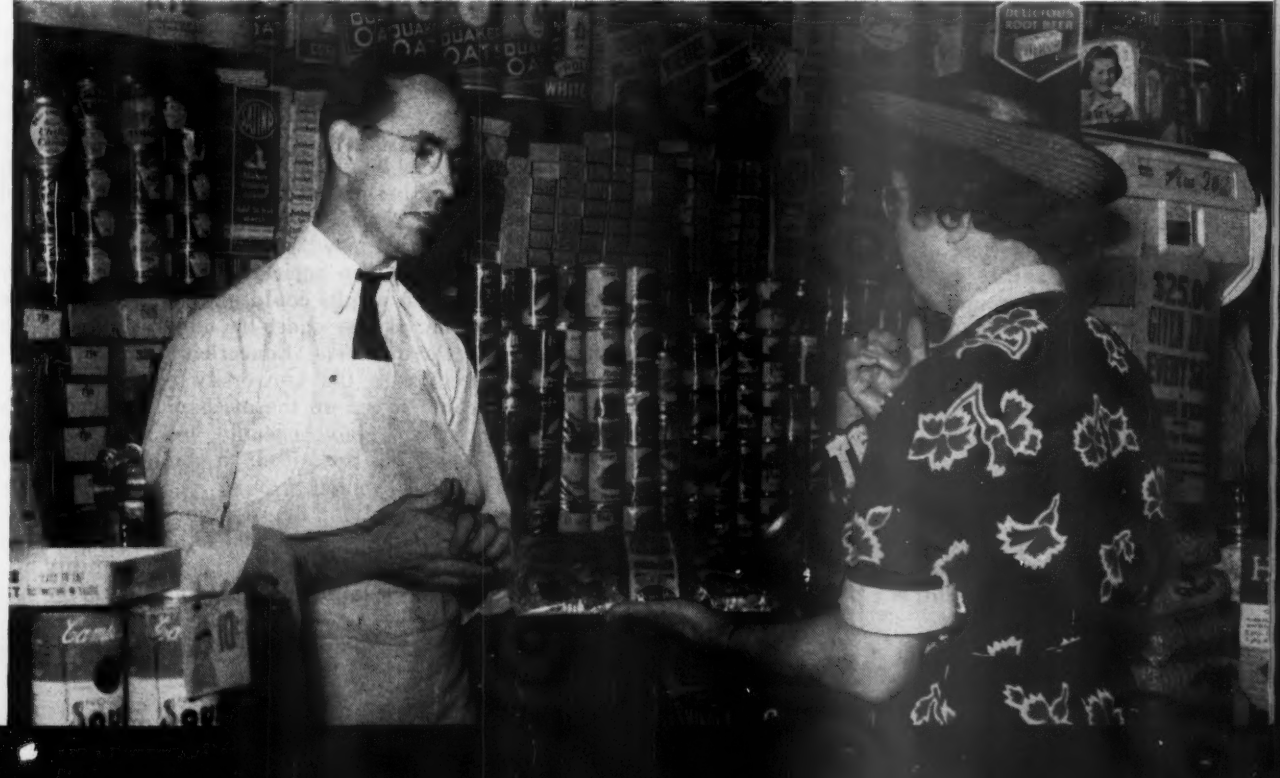
William V. Burnell, vice president and appraisal manager, Stone & Webster Engineering Corporation, is the author of many papers dealing with economics and related subjects. With Stone & Webster since 1906, he has made many appearances before courts and commissions in connection with matters of financing, rate regulation, depreciation, taxation, and so forth.

The foregoing derivation gives us the indication that the National Income increased in the 13-year period from 1935 to 1948 by 26 per cent or 2 per cent per year (noncumulative). It must be pointed out, however, that the National Income is a net figure after deducting for the wearing out of the capital wealth produced in previous years by the process of depreciation charges. A deduction is also made for taxes paid by corporations. We have another statistical figure known as the Gross National Product which is a better measure of what all the hours of labor have produced. The result in terms of a "productivity" index is developed as follows:

	1935	1948
Gross National Product in Billions (1)	$72.2	$262.4
1935=100 .....(2)	100	363
Price Index .....(3)	100	206
Volume Index (2)/(3) .....(4)	100	176
Labor Hour Index .....(5)	100	154
Productivity Index (4)/(5) .....(6)	100	114

(*Continued on page* 33)

The author points out that to live better we must work for it; that the objective to be sought is not an ever-increasing dollar wage for everyone, but more and better production facilities and full employment.



About Those License Exams...

REFRESHER COURSES–WHY AND HOW

By

Andrew R. Weber

Professional Engineer

MANY states now have laws that require engineers to pass rigid examinations in order to obtain their licenses. These examinations do not present an easy problem for the man who has been out of school for some years and who has lost touch with many of the aspects of engineering. Likewise, the young engineering graduate may find that subjects he studied in his first years of college are no longer fresh in his mind. To help these men obtain their licenses, many state and chapter units of the NSPE have organized refresher courses for members and non-members desiring study.

But before we outline how some of these organizations operate their courses, let's take a closer look at the type men who will be interested in participating.

In the ordinary course of events, a graduate engineering student endeavors to locate himself in industry without delay. It may take several years before the young engineer finally finds his life's work which will require specialized rather than generalized engineering practice. At this stage of his career, the young engineer centers attention and effort on his specialty in order to become as proficient as possible in his field of endeavor.

As specialized engineering knowledge increases the background of an engineering education recedes with the result that some of the fundamental topics in mathematics and in the pure and applied sciences become obscured. It should not be surprising, then, to a graduate engineer that, let us say, his knowledge of thermodynamics has evaporated after ten or fifteen years have been spent in machine design, particularly so if thermodynamics proved to be the "bugbear" of his curriculum. Again, the service courses in an engineering curriculum may have been troublesome during student days and were given perhaps but secondary consideration at the time. The first impressions of these courses are too weak for lasting effect and this knowledge is practically forgotten.

THE Ohio Registration Act, and it is fairly representative, determines the scope of the state examination to test the applicant's ability to design and supervise engineering works. The examination consists of two stages:

> "In the first stage shall include the following subjects: mathematics, chemistry, physics, fundamentals of design, engineering organization, the provisions of this act, professional ethics, and such other subjects as the board may select from the published curricula of the recognized engineering colleges of Ohio."
>
> "For the second stage examination the applicant shall be examined in the application of such major branch of engineering in which he specializes."
>
> (Amended Senate Bill No. 329.)

The first stage of the examination which refers to general knowledge is usually the source of worry to the applicant for license who has passed several years in industry. The second stage based upon specific practice does not cause the same concern, for the applicant generally feels confident that his experience will carry him through this phase of the examination successfully. It is advisable for a graduate engineer to take the first stage of the state examination as soon as he is qualified to do so while his general educational background is still fresh and his detailed engineering knowledge is retained. As an engineer-in-training, the young engineer should keep in mind the day of registration for license while he is acquiring the experience as demanded by law, so that the second stage of the examination does not present serious difficulties.

Now, as I stated previously, several Chapters of the Ohio Society of Professional Engineers have interested themselves in the cause of the "older" men desiring registration, by promoting the Refresher Course movement.

THIS movement has taken on a professional aspect in that it is a non-profit activity of the Chapters and is promoted solely for the benefit of the individual concerned. The Chapters do find in this movement a field for recruitment but no individual is obligated to membership because of participation in the Refresher Course.

There are several approaches in formulating a Refresher Course and the following may serve as a guide. The Chapter may decide to conduct a Refresher Course under its sole sponsorship. Members may volunteer to render teaching services and the sessions may be held in a rent-free meeting place. Under these conditions no fee should be assessed to the men attending the course.

An engineering professor may be approached by the Chapter to present lectures covering the subject matter that may be given in the examination for license in a particular branch of engineering. A fee should be charged for the professor's services and for other incidental expenses that may be incurred.

The Dayton Society of Professional Engineers thought that best results could be obtained by sponsoring the Refresher Course under the administration of the University of Dayton. The Education Committee of the D.S.P.E. meets with the University officials of the Engineering School to set up the mechanics of the course as regards program, class schedule, teaching personnel, etc. The Society obligates itself to obtain the required registration for the course through personal contacts, newspaper articles, bulletin board announcements, etc., and to collect the nominal fee charged to cover the necessary expenses. The University assumes the responsibility of acquiring the services of staff members to lecture on the subjects of their

About the Author . . .

Engineer Andrew R. Weber has been engaged in engineering education at the U. of Dayton since 1926, and is now Professor of Mechanical Engineering. He is also coordinator and supervisor of the engineer's license examination refresher courses at the Dayton school.

Engineer Weber is active in many engineering organizations, and has written several books and articles. He has a B.S. from St. Mary College, a B.M.E. from Dayton, and a M.M.E. from Catholic University.

specialties, to supply lecture hall facilities, and to supervise the smooth functioning of the course.

THE program includes the review of algebra, trigonometry, and the calculus which constitute the mathematical subjects treated; of chemistry and the physics, the basic sciences; and of mechanics, fluid mechanics, thermodynamics, heat-power, electrical circuits and motors, generators, and transformers, the engineering service courses.

The last part of the course is devoted to seminar periods in all branches of engineering warranted by the number of men enrolled, the minimum number being four. In the seminar periods, the problems pertaining to a particular field of engineering are discussed at length. Whenever possible, a practicing professional engineer is in charge of the seminar periods. It is our experience that the largest enrollment is in the mechanical engineering seminar, followed by that of industrial engineering, electrical engineering, civil engineering, and chemical engineering seminars. The men applying for examination in structural engineering are requested to join the civil engineering seminar; those for metallurgical engineering the chemical engineering group; etc., if the number enrolled in these branches does not warrant a separate seminar. All applicants attend the lecture devoted to engineering ethics in which the professional and legal aspects of engineering are discussed.

The length of the Refresher Course is about ten weeks with three scheduled meetings per week, each session being of two hours' duration. The course is intended as a review of subject matter previously mastered, hence, the review is both intensive in nature and extensive as regards scope. As the course progresses, the general directions that govern the application for license and the customary procedures followed in the administration of the state examination are brought to the attention of the men in attendance. The state Board of Registration is consulted when particular information is requested by the applicants; or, when special situations arise relative to qualifying for the examinations, to the examinations themselves, etc.

AFTER the men have taken the state examination for license they are requested to fill out and return to the chairman of the Education Committee of the Society a prepared questionnaire. Comments, criticisms, and suggestions received through the questionnaire give valuable information as to the formulation and administration of future Refresher Courses. The first courses conducted included no seminar periods as the aim proposed was to refresh the forgotten theoretical knowledge. These courses prepared the men for the first stage of the license examination but left them unprepared for the second stage thereof. Following the suggestions offered, one seminar period was introduced into the program at first, then three, and recently six. With this arrangement we feel that the second stage of the license examination is not being slighted and the applicant develops greater confidence in himself for the examination itself.

The results obtained thus far are encouraging even though all the men enrolled in the various courses held did not pass the license examination successfully. A study is made of the examination results to determine, if possible, the reasons for failure and to promote the registration movement resulting in professional engineering status. Success in the license examination is attributed in part to participation in the Refresher Course; and, men who have failed state that the course was of benefit to them in acquiring information and stimulating their interest along engineering lines.

Many Chapters Use Refresher Courses As Service To Members

One great service any chapter or society can render to its members or to those who may become members, is the sponsoring of refresher courses.

The courses, designed to aid the professional engineer who is about to take a license examination, should be given serious consideration as an excellent public relations activity. Here are two examples of those now promoting courses.

The Kings County Chapter, NYSSPE, has recently begun its review course in Industrial Economics, to prepare engineers for the New York State license examination. The course is held in the Brooklyn Club House, and is conducted by Malcolm H. Gotterer, practicing management consultant, and a member of the Society For the Advancement of Management. For use with the course Mr. Gotterer has prepared a series of notes in text book form in collaboration with Samuel S. Aidlin. The latter is director of review courses for the Kings County Chapter and a practicing professional engineer. The Chapter is now accepting registration for the review courses next fall to prepare for the May, 1951, examination.

Out in the Middlewest, the Illinois SPE has just completed a series of refresher courses conducted with the cooperation of the Division of Extension of the University of Illinois. R. K. (Bob) Newton, NSPE, and a member of the Champaign County Chapter, ISPE, worked with the Division at the University. About 300 men in 7 cities finished the spring classes and took the examination.

Officials in Illinois report that the classes are a rich source for prospective Engineer-In-Training members.

Another chapter working with a large university in order to help its members review forgotten subjects, is the Erie County Chapter of the NYSSPE. Engineer Dick Wohler reported recently that engineering courses held in cooperation with Cornell University would be continued in the fall.

Boston Meeting Highlights . . .

Directors Act On Full Agenda

PROGRESSIVE action that means real strides forward for the individual NSPE member as well as the profession as a whole, was the result of the Annual Meeting of the Society held last month in Boston.

The highlights:

1. The Board of Directors gave approval to a program to promote voluntary contributions from the members for the purpose of an expanded public relations program by the Society.

2. The Board voted that it is "definitely unprofessional for an engineer, professionally employed, voluntarily to join a heterogenous labor union, dominated by, or obligated to, nonprofessional groups."

April, 1948 has jumped more than 5,000 members,

3. It was emphasized that membership since and that the number of state societies has gone from 27 to 35.

4. It was voted that NSPE be opposed to the nationalization of health services as economically unsund and deterimental to the public interest.

With retiring President Alan G. Stanford opening the meeting with his report to the Board of Directors, the 16th Annual Meeting of the Society started work on a 2½ day agenda.

Stanford stressed the need for greater emphasis on NSPE's Engineer-In-Training activities. He urged all members to give the newcomers the benefit of their experience, and to encourage professionalism among them. He then called upon the chapters to be even more active than they have been in the past, and to work closely with their State and National headquarters in as many matters as possible.

In conclusion, NSPE's president recommended that:

- Each State Society actively promote Engineers' Week in 1951.
- Larger State Societies establish functional groups to get together engineers with common problems for specialized study.

Stanford then expressed the conviction that the, "Society is in excellent shape and destined to continue its forward march in assisting the professional engineers of this country in achieving our ultimate goals."

Executive Director Paul H. Robbins then outlined briefly the functions and accomplishments of the Executive Offices in Washington.

Covering legislative programs first, Robbins mentioned some of the activity prominent during the past six months. He noted the attendance at several conferences at the State Department on Point 4 legislation, and the close work that has been done with congressional leaders on such subjects as the District of Columbia engineers' registration law, the Advance Planning Program, and others. He went on to outline the work of the office as a liason between members and government departments. Many members and non-members, he said, now look to the Washington headquarters for legislative interpretations and advice.

Turning to publications prepared and distributed by the Headquarters, Robbins noted the continuing popularity of the Legislative Bulletin. He also announced that a monthly Public Relations News-Letter, designed to aid the chapters in public relations work, and to help them plan more effective activities, was now being distributed to the states and chapters.

After the reports of President Stanford and Executive Director Robbins, the Board, which included 37 representatives from 33 states, discussed subjects that embrace many phases of the Society's and the profession's activities. The more important ones are digested here for the convenience of the reader.

Public Relations

This report again outlined the great need for a more active public relations program by the Society. The Board voted to approve a program to establish voluntary contributions from the members to defray the cost of such increased public relations activity.

Young Engineers

A statement of principles by the NSPE regarding collective bargaining by professional employees was adopted. It read, in part:

1. It is definitely unprofessional for a professional engineer, professionally employed, VOLUNTARILY to join a heterogenous labor union, dominated by, or obligated to, nonprofessional groups. As stated by the Society, through its Board of Directors at Oklahoma City in September 1948, "The individual responsibility and independent judgment required of a Professional Engineer are incompatible with the regimentation fundamentally inherent in unionization."

2. Organization of professional engineers for collective bargaining in any form are to be deplored, although their existance, for the present, may be condoned under certain circumstances.

Membership

NSPE membership growth is as follows:

	Number of States	Total Membership	EIT Members
April 30, 1948	27	17,777	None
April 30, 1949	34	20,293	98
May 31, 1950	35	22,844	563

This report shows the steady growth of the Society and particularly brings out the effect of the recent implementation of the 8 step membership campaign. This campaign is only getting into stride and it was noted that the month of May shows a substantial increase in new members.

About 85,000 of the initial mailer pieces of the campaign have been sent out to non-member registered engineers, and more than 11,000 have returned the card requesting the booklet "Man Was Naked."

Resolutions

1. The Board of Directors adopted a resolution disapproving the socialization of the medical profession.
2. The Board urged state societies to study registration laws, and work with the Registration Boards to effect improved conditions for reciprocity.

Awards

An annual award to an outstanding engineer was authorized. Suggested rules call for the receiver to be an "engineer that has contributed to the public welfare, in

President Stanford, left, presents the symbolic President's Cup to the new NSPE President, Sidney L. Stolte. In the foreground is William F. Ryan, NSPE Vice President, and long active in the Massachusetts SPE.

advancement of his profession, or service to mankind."

Legislation

The Board considered pending legislation that would authorize the government to promote and embark upon research, and to collect and distribute engineering information to and for small business. The Board reiterated its previous position opposing government intervention into private engineering practice and authorized the Legislative Committee to take such steps as seem appropriate in implementing this policy.

Regarding engineering activities in the Federal government, the Directors endorsed a plan to establish a board of engineering review as a top policy group to settle jurisdictional disputes and eliminate overlapping and confusion between Army Engineer and Reclamation Bureau projects.

American Engineer

The status of the AMERICAN ENGINEER was touched upon in several reports. The advertising promotional program was reviewed and Board members were told that an energetic campaign is now in progress to solicit advertising for the coming year. The magazine now has advertising representatives in New York and Chicago, and one on the West Coast will be added shortly.

Ethical Practice

The Committee submitted 15 rules for ethical conduct to the Board of Directors for consideration. The Board voted to refer the rules to NSPE's representative to the Engineers' Council for Professional Development's Committee on Engineering Ethics.

Salary and Fees

The Committee reported that a report had been completed covering the existing available material on Salary and Fee Schedules. This interim report will be distributed to chapters in the near future.

Professional Unity

Past President Alex Van Praag, Jr., NSPE's representative to a group of 16 large engineering societies discussing the question of organization for increased professional unity, gave a full report on what had transpired at the group's past few meetings. *(See page 21 for more on this subject—Editor.)*

Constitutional Changes

It was voted to expand the Nominating Committee to include one representative from each area.

Further, it was agreed to change the Military Affairs Committee to the National Defense Committee and to expand the scope of its activities to include "a study of the status of the professional engineer in civilian defense and its proper relationship to the National Guard and Reserve components of the armed forces of the United States."

It was also asked that the constitution be clarified in regard to the function of the Annual Meeting of the Society in contrast to a Board Meeting.

Nominating Committee

Charles E. Blais, Rhode Island, was elected chairman by Board action. Members are:

Harry C. Robert, Georgia
Robert E. Allen, Ohio
Trigg Twichell, Texas
John B. Jardine, North Dakota

All members of the committee are past presidents of their respective State Societies.

Fall Board Meeting

For better spacing of Board Meeting voted to change Fall Meeting from Wheeling, West Virginia, sept. 15 and 16, to Little Rock, Arkansas, on November 3 and 4, 1950.

At the left is shown Sidney L. Stolte, (1.) NSPE President-elect, William F. Ryan, NSPE Vice President, and President Alan G. Stanford. On the right, President Stanford presents Past President's pin and certificate to Alex Van Praag, Jr.

Digests of Nold, Lubin Speeches at Boston

(Remarks by Brig. Gen. George J. Nold, Asst. Chief of Engrs., U. S. Army.)

I would like to point out here the question of engineer mobilization in the planned role of National Defense. Unfortunately, this is a detail, a vital detail as a matter of fact, that is now under study by the top level of command. No concrete plan has yet been formed, but it may well be that the subject can be discussed properly at your next annual meeting.

However, there are a number of important ways in which an efficient group such as your own can be extremely helpful today without waiting for a firmed-up over-all plan. For example, you can and should take an active stand on all questions no matter how controversial the questions may be. If an issue is worthy of controversy, of active differences of opinion, it is worthy of close study and an honest stand.

* * *

Simultaneous with the demands of our own nation for continuing development, we engineers are confronted with a larger and no less important opportunity. The spotlight of public attention was given this opportunity, this challenge, by the President of the United States in his inauguration speech. I refer, of course, to his famous Point 4.

Such an enterprise involves first of all skilled men—engineers, scientists and technicians—who will show other people how to do the needed job. It also involves private and international capital that will take the risk of financing development projects. And it involves finally a wholly new series of restraints so that the financing of these projects does not carry with it the right to exploit the backward areas for profit alone.

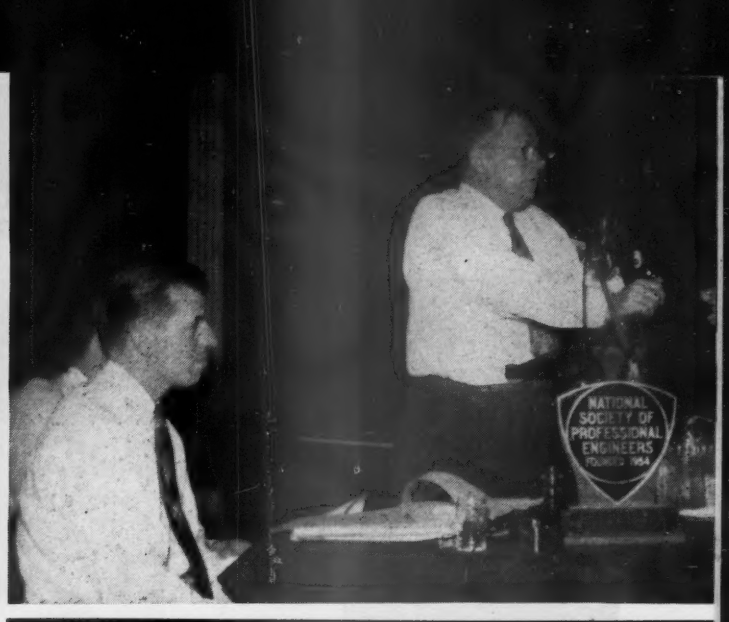
A hundred years ago, America was an underdeveloped land. Today, it is a magnificent example of capital investment and engineering endeavor working hand in hand. It may be our lot as engineers to experience—and in large measure to bring about—a turning point of the human race. Our professional goal must be identical with our desires as Americans citizens. We must help the free peoples of the world, through their own efforts, to produce more food, more clothing, more materials for housing, and more mechanical power to lighten their burdens. Experience shows that our own national commerce with other countries shall expand as these countries progress industrially and economically.

(Remarks by Isador Lubin, U. S. Representative to the UN, and member of the State Dept.)

Future peace of the world is dependent upon our ability to help the peoples in the under-developed areas to increase their own standard of living to the point where they will no longer have to face the continuous prospect of hunger, disease. To do this job will require the best engineering brains that the world has today. The under-developed areas require the development of transportation, power, communications and the basic "know-how" of modern industrial production. In all of these phases of their economic activity American engineers as well as engineers from other parts of the world will have to make their contribution. The United Nations, as well as the government of the U. S. under its Point Four Program will require engineers who have more than technological "know-how." We will require engineers who know something about the religious, economic and social institutions in the countries in which they will work.

If our program is to be successful, our engineers will have to understand and be sympathetic to the ways of life of these peoples. It is quite possible that special courses will be arranged at some of our leading universities to give training to engineers in the field of economics, anthropology and the history of the areas into which engineers will be sent. We cannot force our way of life on other peoples. We can, however, make them understand the advantages of our way of life and accept it on their own volition, if we make them feel that we are not imposing anything on them and that our sole motive is to make it possible for them to better their standard of living so that they too may share in the blessings of modern science and modern production.

Over 1 billion people in the world today are living on an income of less than $100 a year. These people can look forward to an average life of less than 30 years. If we want peace in the world we must give them something to look forward to—a life free from the ravages of disease, hunger and drouths. The Point 4 program as approved by Congress provides that the government of the U. S. either directly or through the U. N. can make technical aid available to under-developed areas in fields of health, engineering, education, agriculture and other fields. The purpose of the act is to give the peoples in these areas the know-how that is essential if they are to increase their production and thereby their standard of living.



Mass. Society Does Top Job As Hosts To NSPE

The many hundreds of engineers and their wives who were fortunate enough to attend NSPE's Annual Meeting in Boston last month, left one of America's most historic cities agreed on at least one thing: The Massachusetts Society of Professional Engineers mixed Yankee fortitude and graciousness to play the role of hosts with unforgettable aplomb.

Under the most able direction of Edgar A. Harty, MSPE's president, the meeting wheels were oiled to function smoothly throughout the three-day meet. And with two one-half hour radio shows broadcast, plus hundreds of column inches of newspaper publicity, it was evident that the Society's sojourn into New England did not go unnoticed.

The meeting was as successful socially as it was professionally. On the afternoon of the first day the engineers and their ladies heard Dr. Warren K. Lewis, Professor Emeritus, MIT, and the "granddaddy of chemical engineering." In the afternoon the ladies enjoyed a concert and tea, and that evening all attended the MSPE's Annual Dinner. At this time William F. Ryan, NSPE Vice President and long active in the affairs of the MSPEs, received a placque in recognition of his tireless efforts devoted to the progress of the Society and the profession.

On Friday, June 9, sightseeing tours occupied the afternoon, with everyone going to Symphony Hall in the evening to hear Arthur Fiedler conduct the world famous "Pops" Concert.

Saturday's luncheon guests heard a humourous delivery on "Two Chaplains—AWOL," given by Rev. John P. Fitzsimmons. He was followed by Brig. Gen. G. J. Nold, Assistant Chief of Engineers, U. S. Army, and Isador Lubin, Consultant on Foreign Affairs, State Department.

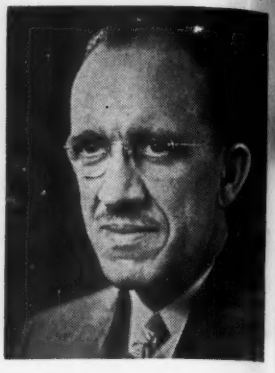
NSPE's Annual Banquet in the evening closed the successful meeting. After the new officers for 1950-51 were presented, Past President Alex Van Praag, Jr., received the Past President's pin and certificate.

Clockwise: **John D. Coleman, NSPE Vice President, reports to Board; President Alan G. Stanford directs meeting with Ex. Dir. Paul H. Robbins at left; Brig. Gen. G. J. Nold addresses group; Isador Lubin speaks; and Dr. Warren K. Lewis talks to engineers.**

NSPE Officers For 1950-51

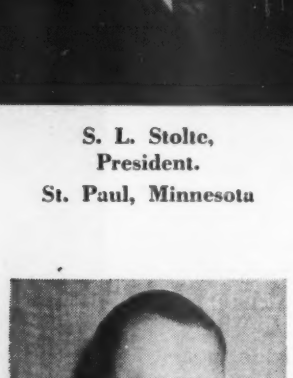
Laurence L. Dresser,
Vice President,
Southwestern Area.
Tulsa, Oklahoma

S. L. Stoltc,
President.
St. Paul, Minnesota



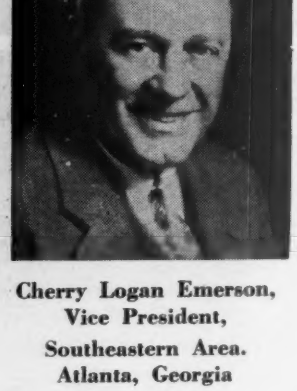
John D. Coleman,
Vice President,
Central Area.
Dayton, Ohio

Cherry Logan Emerson,
Vice President,
Southeastern Area.
Atlanta, Georgia

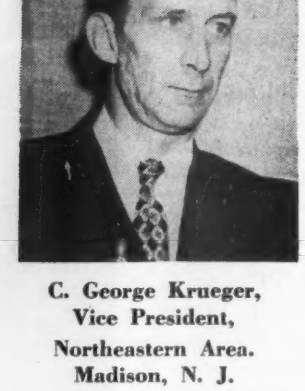


C. George Krueger,
Vice President,
Northeastern Area.
Madison, N. J.

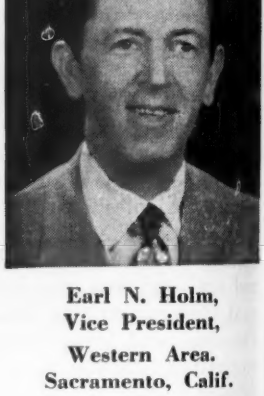
Earl N. Holm,
Vice President,
Western Area.
Sacramento, Calif.



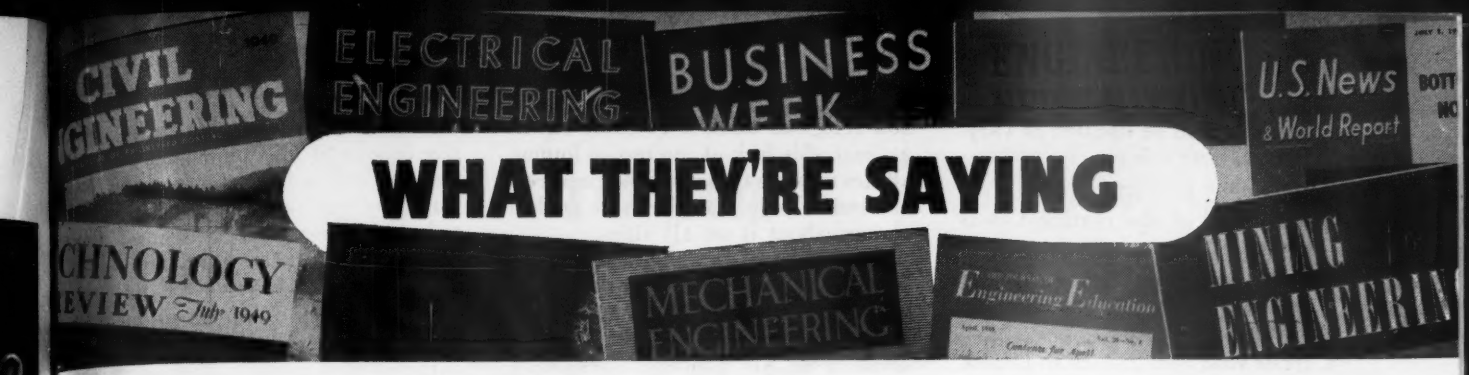
C. G. Roush,
Vice President,
Northcentral Area.
Kansas City, Mo.



Paul H. Robbins,
Executive Director.
Washington, D. C.



Russell B. Allen,
Treasurer.
College Park, Md.



WHAT THEY'RE SAYING

GEN. CLAY ON ENGINEERS . . .

I do not apologize for speaking of world affairs here, because they are affairs of direct concern to you who graduate today. Our world needs engineering talent. It is a world to which your education will enable you to contribute much. However, as you use your talents and your training to solve the engineering problems which confront you and which, when solved, contribute to further technological progress, do not be satisfied with this contribution, as important as it is.

Because ours is a constructive profession we are apt to withdraw within it and to remain aloof from the affairs of the day, even to the extent of shirking the full responsibilities of citizenship.

We cannot all contribute directly to world affairs and to bringing about a peaceful world. We can all contribute indirectly. We have obtained a position of world leadership not entirely because of our wealth and our prosperity, but also because of those qualities as a people which have brought us wealth and prosperity. If we are to lead a free world into lasting peace, then we must maintain for our own people the advantage which we believe comes only in a democracy —equal opportunity for all under a government which is a servant and not a master of the people. Your education has come to you largely as a gift of our people who believe that engineering is essential to the advance of civilization. However, they expect more from you than technological achievement. They expect you to assume the daily obligations of citizenship, to be alert not only to the affairs of the world which concerns America, but also to the affairs of the community. These latter affairs, no matter how small they may seem, concern the world too, because our leadership as a nation can be exercised in the democratic tradition and to the full only as we continue to grow internally and to offer a better life within our shores to our own people.

You are fortunate indeed to be graduating today as citizens of a nation which has found itself and which has accepted the responsibilities of world leadership with resolve and determination to exercise its role so that there will yet be a free world. As the leaders of tomorrow, it will be your responsibility to see that this role of world leadership is maintained until there is lasting peace.

Our strength is so great in comparison with the strength of those who would enslave the world that we cannot fail unless we lose confidence in ourselves and faith in our institutions.

You who have received an education, which carries with it both knowledge and understanding, leave here today to assume the full responsibilities of educated citizenship and not the least of these is to carry with you and to impart to others wherever you may go not only faith in America but confidence in America exerting its position of leadership in world affairs to establish a stable and peaceful world.—*From Gen. Lucius D. Clay, Commencement Address at the Georgia Institute of Technology, Atlanta, Ga., June* 12, 1950.

CIVIC-MINDED PROFESSIONALS . . .

Are professional men as a group constitutionally lacking in a sense of civic responsibility? That question is raised by two wholly unrelated but curiously similar statements made at professional meetings in recent weeks. Lester L. Bosch of the firm of Jackson & Moreland, speaking at a meeting of electrical engineers, said: "A count of noses seems to find Mr. Engineer not represented in proportion to his potential strength on neighborhood civic committees nor in the thousand and one other activities of city, state and nation." At a meeting of the American Medical Association, Louis Bauer, chairman of the association's trustees, characterized as disgraceful the fact that in one Midwest city only 35 per cent of the doctors had registered and only 23 per cent took the trouble to vote at the fall elections.

It readily could be that the trouble is constitutional, that the type of man who seeks professional training has a mental make-up that gets no satisfaction out of the give and take of working on civic committees. In the case of physicians, their failure to exercise the franchise has a very real danger for that profession. Dr. Bauer told his hearers that if 20 more radical congressmen are elected this fall and a few more radical senators, the socialized fight will be over.

Engineers have no such immediate problem on their hands, yet they could have at almost any time. Anything, therefore, that can be done to stimulate greater civic consciousness on the part of engineers should be a first order of business on the part of state and national engineering groups.—*Engineering News-Record, June* 8, 1950.

ENGINEERS NEEDN'T BUILD BRIDGES . . .

A professional engineering education is a basis for many kinds of life work. About half the graduates of the 150 engineering schools in the United States follow the specialized technical fields, such as civil, electrical, mechanical, industrial and chemical engineering. The other half find occupations in a wide variety of jobs which increase each year in kind and number as the work of the first half increases the applications of technology.

A few days ago, the chairman of the board of a Washington hospital asked me to recommend a newly graduated engineer for the post of assistant hospital manager. He said, "I've come to the conclusion that the management of a hospital is a kind of job that a man trained in engineering can do best."

The work of purchasing agents, transportation companies, and the sale and distribution of thousands of technical materials, from raw materials to household gadgets, is made easier by an understanding of equipment that comes from an engineering education.

Now it is obvious that what we call our mechanical civilization makes it natural for the engineer to be essential in the fields of technology, but there is another reason why a young man trained as an engineer has an additional tool in his kit when he is growing. That tool is what educators call "the engineering method." It has

five steps and can be applied in varying degrees. Here it is:

1. Define the problem.
2. Gather all of the pertinent facts and data.
3. Apply engineering methods of analysis to the solution of the technical problems.
4. Draw your conclusions and check these conclusions.
5. Formulate a plan of action and follow through.

The first four steps involve science, mathematics and applied engineering method, but the things that makes a successful man are the business values and understanding of human relations that are associated with the fifth step.

You must get along with people; you must learn how to write clearly, to speak convincingly. No matter how much you think you know, the measure of your accomplishment is how much you can get the other man to accept. Associated with the fifth step also are the personal attributes of courage, the ability to fight for what you believe in and the realization that a successful life means giving as well as taking. Perhaps it is the last human quality, "the sense of service above self," that is the reason why at least two Washington ministers hold engineering degrees.

The recent war introduced engineering method and engineering equipment to hundreds of thousands of young men. This dramatization of your capacity to mass produce, to develop new areas of applied science such as radar and nuclear energy, fascinated many of them. This year the peak load of graduates of the four years of college professional training is turning into industry an oversupply of men in certain fields, particularly in the electrical areas. But the principal technical societies and the United States Office of Education estimate that in 1954-5 there will be another shortage of engineering-trained men.

The common denominator of the men who hire engineers is "give us a man trained with fundamentals of the engineering method and we will help him specialize in our business."—*Frederick M. Feilser, Dean, School of Engineering, George Washington University, Washington, D. C.*

CITIZENS FIRST . . .

There is a current belief in academic and professional circles that engineers are concerned only with the technical aspects of their profession. Engineers are continually being criticized, even by their own members, for not being active in political, social and religious affairs. To some extent at least, this lack of interest in human affairs must be typical of the engineer, otherwise there would not be such a clamor about it on all sides.

In defense of the engineer it must be said that usually his work is such that he can to a large extent remove the human element as a factor in the solution of his problem. Designing a transmission line or planning the strength of a bridge can be accomplished with little worry about the human element. Thus the average engineer does not feel the need for social or political activity as an adjunct to his business as keenly as do other professionals.

The main cry for engineering participation in social and political affairs has centered in organizations composed of registered professional engineers. These engineers, who have been recognized by the state as particularly qualified to serve in the community interest, through the efforts of their respective societies, have continually worked for needed improvements in the lot of all engineers.

Engineers, as the foremost professional men of the day, must leave off being mere engineers and lead the way toward a balanced and integrated society. Engineers are bound henceforth to understand not only the technological progress which they are achieving, but also the kind of society which supports that progress and, in turn, is carried on its shoulders. The question is not what are we doing as bridge builders and physical scientists, but what are we doing as moral scientists and social technologists?

As the engineer considers these questions of professional stewardship, he must admit that it is no longer possible for him to confine his efforts to engineering. The peculiar forces with which he is dealing today will make it extremely difficult for him to limit himself, in this modern world, to technical matters. He has come too far, he and those who have preceded him, and he has powerfully affected and shaped the lives and destinies of too many millions of people to deny his responsibility now.

The day is past when the professional man can delegate his understanding and his action, in a sphere not specifically his own, to some selected advocate, or else neglect it altogether. When Communism jumps out of every headline and from around every familiar corner, the situation of even the average man becomes a little uncomfortable, and that of the professional man may be particularly difficult. Here again there is a great temptation for the true specialist, such as the engineer and the scientist, to withdraw into the respectable and protective cocoon of his immediate task and leave to others the defense of the nation. The true professional man, if he values his integrity, will not compromise on such an issue. He cannot if he wants to keep his self-respect.

True, the nature of the engineering profession demands the traditional sureness and caution of science. The engineer can still retain his caution, but, from his knowledge he can give us light; he can build up public pressure for the important things he knows should be, and can be done. By talking about these things now the engineer will stand a better chance of realizing his dreams.—*Civil Engineering, June,* 1950. *From an article by B. P. Barber, Immediate Past President of the South Carolina SPE.*

IS ENGINEERING A PROFESSION OR BUSINESS? . . .

The question, "Is the practice of engineering a profession or a business?" would have had little pertinency during the latter part of the Nineteenth Century. In the past fifty years, however, great changes have occurred, not alone in the amount and character of technical knowledge, but in the manner in which the practice of engineering is carried on, and in the structure and manner of functioning of groups or firms engaged in it.

Engineers are in the habit of calling themselves professional men, irrespective of the functions they perform, or the manner in which they perform them. In the sense in which the term "profession" was developed, and in the minds of the general public, a profession is a calling or means of livelihood, the pursuit of which involves the utilization of specialized knowledge, and the ability to exercise independent judgment based on this knowledge. A business, on the other hand, is a means of livelihood in which things, including services, commodities, etc., are bought, sold, produced or handled.

A century ago, it was customary to speak of the three "learned" professions—medicine, law and theology—entrance into which required a thorough grounding in fundamental principles, usually secured through formal training. As science and its applications developed, formal education was provided for other vocations, including engineering, architecture, accounting, dentistry, etc., and a man who followed such a calling was termed a "professional man."

(*Continued on page* 32)

TO THE Editor...

Technical Education . . .

Dear Editor:

I wish to make some comment on the current proposals for revamping technical education as published in recent numbers of the AMERICAN ENGINEER. I am quite willing to admit that the world, that is, the humans who inhabit it, is in a bad condition. I am also willing to admit that we engineers are somewhat responsible for this condition, for through our efforts we have released our brothers from the necessity of thinking about many of the routine operations of life.

From this I am even willing to admit that the trouble stems from our lack of emphasis on the cultural and spiritual side of life; and that if the other parties who are equally culpable will not do their share, it is up to the engineering profession to do something about it. However, I do not agree with the remedy proposed by the educators and sold, hook, bait and sinker, to the engineers.

If there is anything wrong with education it is due to the "educationists" themselves. It is one thing to blame the home, the clergy, the publicist and the politician: but the pedagogue should assume the major portion. Why should the engineering college be required to give much of its valuable time to teaching those non-technical subjects which should be taught in the high schools? The high schools should give that training in good citizenship, writing ethics and in public speaking which all of our citizens should have. They should also give as the fundamentals of mathematics and science on which to build our later college educations.

From my observation of the products of our high schools from the view point of a college teacher and that of a parent, I believe the high schools have done a poor job. If they would inspire their students with a desire to learn these fundamental humanistic stem subjects, they would give their students the foundation for proper living.

* * *

I thoroughly believe every engineer should spend as much time as possible on subjects which will make him a better citizen; but I do not believe that mere class room work in these fields is enough. The pursuit of these liberal subjects should be the life time aim of the engineer as should be the acquisition of up-to-the-minute technical information. Doctor W. E. Wickenden ably covers this in his famous address, "The Second Mile."

May I sum up by saying that I recognize the ailment but disagree with the proposed remedy. Can it be that those who agree with the proposed remedy are trying to court public favor regardless of the merits of the case?

CARROLL D. BILLMYER,
Professional Engineer
Kingston, R. I.

Comment On Cooke . . .

Dear Editor:

It was rather a disappointment to me that the discussion of the recent article by Morris Cooke was limited to the two letters appearing in the June issue of AMERICAN ENGINEER. In view of your editorial endorsement, I had hoped to see considerable interesting comment. As a non-member of the NSPE and one who never quite completed the requirements for admission into the charmed circle of the Profession, I suppose I should request permission to say something in reply to the letter of Henry D. Hammond—which I respectfully do.

I note in said letter a certain lack of humility, not only in rating the general level of intelligence as "far below the engineering level" but also in categorically and dogmatically asserting opinion as fact. This attitude is not, I believe, in line with what is often reverently spoken of as the "engineering approach." It seems to me that the engineer's comprehension of cooperation and its benefits, which Mr. Hammond extolled, is in need of some improvement and expansion. The cooperation of engineers (and other professional men) in fields outside their own technology and especially in the fields of politics and human relations, as urged by Morris Cooke, appeals to me as not only highly desirable, but imperative to the continued progress of democracy, which I take to be synonymous with progress for humanity.

The existence of problems other than those of production and management and the necessity for participation of all groups, including engineers, in discussion and investigation of such matters as civil liberties, public health, international relations, schools, farm policy, etc., was to me the basic thesis of Mr. Cooke's article. And Mr. Hammond, in apparent preoccupation with preferred and advanced types of supermen in the engineering game seems to have missed the point. In my own limited observation, I have felt that engineering schools, for the most part, are so concerned with turning out advanced types of technical brains that not only are the social and political studies omitted from the curriculum, but students are not expected to show an interest in anything which might detract from their technical studies. Even the need for training in managerial techniques directly related to professional engineering has frequently been slighted in favor of what Dean S. C. Hollister of Cornell, in his recent article, called "the semi-professional, semi-vocational approach" to engineering education. Recognizing the perplexing problem of how to include in a college course all the basic science and applied technology which are required to give a young man a start towards becoming a competent engineer, one feels nevertheless that a good start depends also on some competence in social and political effort and that these can no more be left to the student's own devices than can his scientific training. Similarly, when the embryo engineer steps out of the classroom, his development should continue to include humanitarian interests and pursuits and this should be encouraged by the senior members of his profession. I believe some of the large industrial firms have recognized this under-developed area and are providing for its cultivation in their training programs.

• The engineering profession needs more men like Mr. Cooke, who have learned that the world is full of people and that people's problems are not encompassed by considerations solely of production and management. I dare say that if the profession will provide such men, the world will make good use of them.

RICHARD F. HAGLUND
Idaho Falls, Idaho

BOOK LOOKS

Title of book: The American Economic System.
Author: Frank D. Newbury.
Published by: McGraw-Hill. Price, $5.00.

Mr. Newbury, former director, vice-president and economist for Westinghouse, has put between the 548 pages of this book a surprisingly complete summary of his down-to-earth, feet-on-the-ground knowledge of economics. The philosophy of the book is best stated in the Foreword: "This book is dedicated to all students wherever they may be—at school, in business, or in organized labor—who desire deeper understanding of the powerful, dynamic, ruthless economic system which is our American heritage. With understanding there can be greater progress and more stabilities; without understanding there may be stagnation, decay, or even destruction of the system for which we are all responsible."

Title of book: Science and Foreign Relations.
Published by: Division of Publications, Office of Public Affairs, United States Department of State, Washington, D. C.

In this comprehensive 170-page report, the State Department proposes the assembly of outstanding American scientists in a science office here and in diplomatic missions abroad for the encouragement of free, international scientific inquiry and exchange of information essential to the peace and welfare of not only the United States but of the world.

The report was prepared by Dr. Lloyd V. Berkner, Special Consultant of the Secretary of State, who was assigned last October to the task of surveying the Department's "responsibilities in international science."

Title of book: American Labor Leaders.
Author: Charles A. Madison.
Published by: Harper Bros., New York.

With the labor movement in full swing, a book such as this dealing with labor's personalities and forces becomes one of importance to the individual desiring to keep abreast of industrial affairs.

This book is an essentially human, although at times biased account, of the outstanding trade unions and their leaders. The author begins his report by sketching the background of work conditions from the days of the Civil War, and describes the first early attempts of labor at national organization. The book progresses through the years and finishes with a comprehensive report on how the unions have, since 1933, invaded the mass production industries and built up powerful and progressive organizations. A final section provides a survey of current conditions and prospects.

Title of book: Principles of Engineering Economy.
Author: Eugene L. Grant.
Published by: The Ronald Press Co., New York.

Eugene Grant, who is professor of economics of engineering at Stanford University, says engineering graduates feel that the most serious omission in their education is the lack of emphasis on the economic aspects of engineering. This book seeks to alleviate that lack.

A substantial amount of new material has been added to this the third edition of the book. For example, the currently important topic of the treatment in economy studies of prospective price changes is discussed at some length. The chapter on the theoretical aspects of replacement economy has been rewritten with reference to Terborgh's recent contribution on this subject. One complete chapter, entirely new, explains and illustrates the basic principles that should enter into consideration of income taxes in economy studies. The book should make a most important reference book for the practicing engineer and the industrial manager, as well as a textbook for engineering students.

Other Recently Published Books

STEAM TURBINES AND THEIR CYCLES. *By J. Kenneth Salisbury.* John Wiley and Sons, Inc., 440th 4th Avenue, New York 16, New York.

INTRODUCTION TO THE TRANSFER OF HEAT AND MASS. *By E. R. G. Eckert.* McGraw-Hill Book Co., New York.

PROPERTIES OF METALS AT ELEVATED TEMPERATURES. *By George V. Smith.* McGraw-Hill Book Co., Inc., New York.

KENT'S MECHANICAL ENGINEER'S HANDBOOK. VOL. I: POWER VOLUME. *Edited by J. Kenneth Salisbury.* John Wiley and Sons, Inc., New York.

KENT'S MECHANICAL ENGINEER'S HANDBOOK. VOL. II: DESIGN AND PRODUCTION VOLUME. *Edited by Colin Carmichael.* John Wiley and Sons, Inc., New York.

AIEE Urges Broader Responsibilities On Engineer Members

Responsibilities broader than technical service were urged on engineers during the North Eastern District Meeting of the American Institute of Electrical Engineers recently at Providence, R. I.

Asserting that the consulting engineer is "fundamentally honest and sincere," and has done a good technical job, Lester L. Bosch, project manager, Jackson & Moreland, Boston, said that "as a profession, we are yet in adolescent life; we have not merited nor have we received the respect of our fellow men for the satisfactory discharge of our broader responsibilities. Unfortunately, a count of noses seems to find Mr. Engineer not represented in proportion to his potential strength on neighborhood civic committees nor in the thousand and one other activities of city, state and nation.

"In addition to our expertness in technical matters and our fundamental adherence to the sacred canon that the design must be safe, we need to get into broader things. We need to get into broader things in larger numbers. This does not imply that we need to become politicians; we must have the courage to challenge the warped and impractical ideas of the demagogue, to oppose those who think that by pressing a button, filling out a form, socializing industry, men can live in some Utopian existence conjured up by a regimenting state. We must challenge those who indulge in loose or slippery talk and present fallacious data to gain their objective. In short, as engineers we must take full advantage of our unique opportunity to rebuild the importance of man himself as an individual. In every way we should act as a motivating influence and add much needed stability to society as a whole.

"We need to join with those relatively few members of our profession who are already performing outstanding work in the humanities and are getting full satisfaction which comes from doing for others. We need to develop a fuller understanding of the great fundamental changes that have occurred during our lifetime, of the draining of our natural resources, and the alarming dependence of the average man upon scientific and engineering miracles to solve all problems and do all work."

Alex Van Praag, Jr.

ALEX VAN PRAAG, JR., Illinois engineer and a Past President of NSPE, was the Society's representative on the Exploratory Group mentioned in the report printed below. He has also been appointed a member of the Planning Committee.

Group Exploring Professional Unity Releases Report

THE group of representatives of large Engineering Societies, invited by Engineers Joint Council to explore the question of organization for increased unity of the engineering profession, had its second meeting on March 31, 1950. This group consists of the following 16 Engineering Societies:

Am. Soc. of Civil Engineers
Am. Inst. of Mining & Metall. Engrs.
Am. Soc. of Mechanical Engrs.
Am. Inst. of Electrical Engrs.
Am. Inst. of Chemical Engrs.
Am. Association of Engineers
Am. Soc. for Engineering Education
Am. Soc. of Htg. & Ventilating Engrs.
Am. Soc. of Refrigeration Engrs.
Am. Water Works Association
Illuminating Engineering Soc.
Inst. of Aeronautical Science
Inst. of Radio Engrs.
National Soc. of Professional Engrs.
Soc. of Automotive Engrs.
Soc. of Naval Architects & Marine Engrs.

Fourteen of the sixteen societies were represented at the recent meeting.

The major order of business was the consideration of the report of the Planning Committee of eight members which was appointed at the previous meeting of the Exploratory Group on October 20, 1949. The Planning Committee had been charged with the duty of studying and reporting back a discussion of various approaches which had been suggested to the question of organizing for increased unity.

The Planning Committee had held five meetings at which the wide range of subjects involved in the question at hand had been discussed. The report of the Committee submitted at this meeting included a discussion and comparative analysis of three possible approaches to the formation of a unity organization.

Recognizing that many approaches are possible the report of the Planning Committee included also suggestions as to a number of basic principles which were recommended to serve as a guide in any formation of a "unity organization" of engineers—this term being used to designate the organization through which increased unity of the engineering profession may be brought about, without in any sense proposing that this be adopted as a name of such an organization. The basic principles include the following:

The general aim of the unity organization will be to represent all engineers and engineering organizations who desire to be so represented in dealing with questions of interest to the profession as a whole. With this general aim in view, the following are proposed as basic principles to serve as a guide in determining the form of the unity organization and its relation to present engineering organizations.

1. The unity organization should include the affiliation of the major national engineering societies.

2. Affiliation should be open to all national engineering societies meeting certain general standards, on vote of the governing body.

As illustrative of the type of standards which may be established, it may be required that to qualify as an affiliate an engineering society should have a grade of membership with qualifications at least as high as those prescribed by the unity organization as necessary for professional recognition. Also, as a practical matter, affiliation may be limited to societies having more than a specified minimum number of members who are qualified engineers in accordance with this definition.

3. The unity organization should be formed by the modification and development of a present organization or organizations or by the integration of two or more present organizations rather than by the establishment of an entirely new organization.

4. The government of the unity organization should reside in a governing body on which all qualified engineering groups who wish to be associated with the organization are appropriately represented.

5. The activities of the unity organization should be determined by the governing body under the terms of a broad statement of general purposes in the constitution of the organization.

While a fairly complete statement of the general purposes of the organization should appear in its constitution, it does not appear useful to attempt to determine in advance what its specific activities would be at any given time. These would, no doubt, change from time to time in accordance with the wishes of the members.

6. Within its field if activity, the unity organization should be authorized to deal directly with government agencies and others as a representative of the engineering profession.

For example, in such matters as the nomination of engineers to serve as members of committees and commissions, or the expression of opinions on public questions involving engineering, the unity organizations should be empowered to act directly without a referendum of its constituents.

7. To the extent practicable, the unity organization should take over present cooperative activities of groups of national engineering societies, where such activities appropriately fall within the scope of the unity organization.

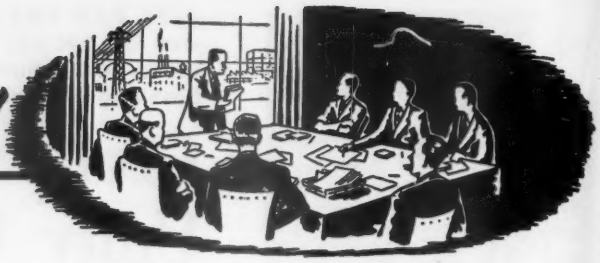
8. The unity organization should have its own offices and staff.

These principles were accepted by the Exploratory Group subject to such modifications as might be arrived at in further discussions. The report of the Planning Committee also presented a number of other questions requiring further consideration.

In the general discussion of the Exploratory Group, every member presented his views as to the type and form of "unity organization" which seemed most desirable and the means by which it might be brought about. The discussion centered about the three approaches to the form of organization included in the report of the Planning Committee. These three approaches would be as fol-

(*Continued on page* 32)

Accent on Activity



IT WAS ALL ACTIVITY AT BOSTON. Things moved and moved fast during NSPE's Annual Meeting in Mass., **thanks to MSPE and their high level organizational ability.** . . . Planning for publicity stole the show. News columns for week before meet carried news and features of coming event. Coverage during meeting was phenominal . . . **WBZ, Boston's largest station (NBC) cut TWO half hour shows for broadcast.** One was aired before a Saturday baseball game—the day's top time. . . . This show was forum type with President Stolte acting as moderator. **Subject: The engineers' role in the defense of our country. RESULTS WERE EXCELLENT. Plans now being made to offer the recording to LOCAL CHAPTERS for radio use in their areas.** . . . Another three-minute recording was made of announcer interviewing Stolte—this was for possible inclusion in coast-to-coast hook-up for regular Saturday night NBC show "Voices and Events." . . . **NIGHT AT THE "POPS" WAS A SELL-OUT.** Engineers and their ladies did not miss golden opportunity to witness famous "Pops" Concert at Symphony Hall. . . . The SRO signs were out early. . . . **ALL STATES REPRESENTED AT BOSTON EXCEPT ONE . . . BIGGEST COINCIDENCE:** Vice President Cherry Emerson was chosen to introduce Speaker Lewis before meeting by Washington office. Doctor Lewis turned out to be VP Emerson's son's father-in-law. . . . **Make plans NOW to attend NSPE's next annual meeting in MINNEAPOLIS next year.**

TOTAL MEMBERSHIP OF NSPE NOW TOPS 23,000. There was a big jump in June. . . . See PAGE 12 for more on membership. . . . Returns now indicate that more than 20% of registered engineers who receive NSPE membership booklet "Man Was Naked," are joining the Society. **This means that the force of professional engineers working TOGETHER to promote professionalism IS GROWING DAILY. . . .** Minn. and Fla. are latest to order state brochure. . . . This booklet helps to get members—is 5th step of 8th step membership program now in full swing under direction of National Headquarters.

INTERIM REPORT OF SALARY AND FEES COMMITTEE will be sent to Chapter and State Societies during this month. **THIS IS VERY IMPORTANT REPORT.** The Committee is now studying the information contained in the report to prepare recommendation for coordination of such studies.

President Stolte has lined up Committees. NEXT ISSUE OF THE AE WILL INCLUDE NAMES . . . WATCH FOR IT. . . . Many new Committees got together at Boston meeting. Some of these meetings were around breakfast table. Frequent observation: Old committee chairman schooling new committee chairman on the "ropes" of the job.

LEGISLATIVE PROGRAM MOVES TO BEAT LAWMAKERS' VACATIONS. . . . Things must move fast now if progress is to be made in Washington before Senators and Reps head for home. Legislative Committee head T. C. Forrest got taste of this on recent trip to National Hqs. He wasn't in office long enough to remove hat when hustled off to meeting with congressional representative re: small business. . . . **THE DISTRICT OF COLUMBIA'S REGISTRATION BILL has now been approved by Senate's District Committee and has been introduced in Upper Chamber and is now awaiting floor action.** TRUMAN HAS RECEIVED RECOMMENDATION FROM NSPE RE: appointments to 24 man National Science Foundation. Group is to be composed of leaders in scientific and educational fields. NSPE will push for engineers to be included. . . . **NSPE President Stolte and Executive Director Paul Robbins** have talked at length with representatives of Surgeon General's office **re: military program for development of sanitary engineering services.**

Past President Ritchie Lawrie, Jr., has been appointed as NSPE's representative on BUILDING OFFICIALS FOUNDATION.

Around The Nation With Our Members

Illinois Board of Direction Meets to Discuss Problems

The forming of a new committee was part of the action taken recently at a meeting of the board of direction, Illinois Society of Professional Engineers. The committee is to be known as the Legislative Analyst Committee.

The chairman of this committee is to be appointed by the president. The members of the committee are to be the chairmen of each chapter Legislative Analyst Committee.

The duties of this group are to: (a) solicit voluntary contributions from society members to finance the maintenance of a legislative analyst to serve and protect the professional interest of engineers on a full time basis, if possible, while the general assembly is in session. All funds obtained by this committee are to be placed in the state society treasury and used only for the above expressed purpose.

The funds are to be disbursed only under the supervision of the board of direction of the society. H. A. Spafford has been appointed chairman of this committee.

Discuss Building

During the pro and con discussion of a society building, it was pointed out by those opposing the building that a legislative analyst was more important than a building, although nobody knew where the necessary money would come from. This new committee now has the difficult task of raising the funds.

The Military Affairs Committee was directed to study the charting of a policy on civilian defense. This policy was to serve as an instruction to the national director on the Illinois position at the Boston meeting.

Professor H. E. Babbitt, the eternal secretary-treasurer of the Illinois Society of Professional Engineers, is taking a sabbatical leave the first semester of the coming school year. He will be taking some trips through the U. S. and may drop in at any meeting of professional engineers.

There is considerable interest in Illinois on national affairs, the meeting showed, especially in the retention of the definition of the professional status in the Taft-Hartley law.

Marion, Ohio, Chapter Takes Steel Plant Trip

An inspection trip through the Pollak Steel Company's Marion plant provided the program for the more than fifty engineers and guests at a recent meeting, of the Marion Chapter of the Ohio Society of Professional Engineers. Groups were conducted through all phases of the plant's operations by R. H. Knecht, works manager, David Pollak, safety director, Lloyd Johnson, assistant superintendent, and others of the company staff.

D. C. Society Holds Meet In Capital

The annual dinner of the District of Columbia SPE was held recently in the Hotel Washington in the nation's capital.

The principal speaker for the gathering was Kenneth Spencer, a member of the Public Utilities Commission of the District of Columbia. Mr. Spencer is the newest commissioner and an engineer from Wisconsin.

Minnesota Chapter At Redwood Falls

Chapter 7 of the Minnesota SPE met recently at Redwood Falls, Minn., with President Roy A. Gilbertson presiding.

The guest speaker was Col. Richard Cook, who discussed the work of the National Guard.

Later a committee was named to consider a geographical name for the Chapter.

Grads Guests In N. D.

At the head table (background) are shown Dr. A. C. Burr (l.) and Laurence O. (Pat) Henry. The beards are being worn in observance of Fargo's Diamond Jubilee.

Recent graduates in engineering from North Dakota State College were the honored guests of a meeting held by District No. 4, North Dakota SPE, at Fargo.

Dr. A. C. Burr, formerly research director of the North Dakota Research Foundation and, at present, in charge of the Lignite Laboratories at Grand Forks, was the principal speaker.

Dr. Burr, who is also a member of the State Board for Registration of Professional Engineers, spoke about the requirements for becoming registered and stressed what the public expects from registered engineers.

Engineer Pat Henry, director of District No. 4, presided at the meeting.

In the photo on the left **Herman F. Barsun, left, and Clarence T. Shoch check the convention program. Mr. Barsun is president of the Midwestern Chapter, meeting hosts, and Mr. Shoch is state president.** ***On the right*** **is a general view of the banquet at which new officers of the State Society were presented.**

15th Annual Meeting Held in Quaker State

Engineers and their wives from all corners of the Quaker State trekked to New Castle recently to participate in the Fifteenth Annual Convention of the Pennsylvania SPE.

On the afternoon of the first day tours were made of local industries, which included the Pittsburgh Limestone Corporation and Bessemer Limestone and Cement Company; Shenango Pottery Company; United Engineering and Foundry Company; and the New Castle power plant of the Westinghouse Electric and Manufacturing Company of Sharon.

The real program of the meet got underway on the evening of the first day with the president's dinner. The speaker was John D. Coleman, of Dayton, O., NSPE vice president, who discussed "Engineering—a Profession or a Regulated Business." The toastmaster was Numa F. Vidal of Sharon, manager of the Pennsylvania Power Company there, who was introduced by Lloyd W. Strayer, general chairman of the convention committee for the Midwestern Chapter, hosts for the meeting. The address of welcome was given by Herman F. Barsun, president of the Midwestern Chapter, and the welcome to the convention by Clarence T. Shoch, president of PSPE.

In his talk Mr. Coleman urged his colleagues to examine their profession and determine where they are heading.

He decried the fact that thousands of corporations are practicing engineering without being registered, and of importance in this connection is the fact that most state corporation laws prohibit such a practice. Many individuals are also practicing without a license and in order to prevent the exploitation of the public, something should be done before the situation gets out of hand.

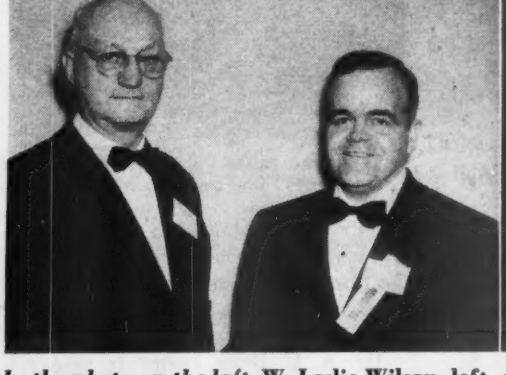
The Oil Staters concluded their convention with a banquet at which time Lt. Gen. Leslie R. Groves, who had charge of the Manhattan (Atom Bomb) project during World War II, was the speaker.

Election of officers held during the afternoon session resulted in Robert A. Blackburn of Pittsburgh being named president. Vice-presidents are: W. Leslie Wilson of Newcastle, Arthur C. Hewitt of Bellefonte, J. D. Carpenter of Harrisburg and Allen H. Kidder of Philadelphia. John T. West of Harrisburg and Walter E. Witte of Philadelphia were re-elected secretary and treasurer, respectively.

In his talk, Gen. Groves related many of the events which surrounded the discovery and perfection of the atomic bomb during the war, some of them of a humorous nature.

He then charged that the United States has given up the initiative to the Russians, because we do not want another war, and as a result, Russia is in a position today to start a war whenever she wants to. Our strength is being dissipated and much is being done to destroy the confidence of the people.

The idea has been spread, the general said, that anyone who went to war and rose to a high place is a dangerous man. We must remember, he pointed out, that Mussolini and Hitler were only corporals in their wars. There never has been a war that this country has been taken into by others than its political leaders, and there never has been a war that has been won by them, but by the military. (*For more about Gen. Groves, sees page* 5—*Editor.*)



In the photo on the left, **W. Leslie Wilson, left, offers congratulations to Robert A. Blackburn. Mr. Wilson was elected a vice-president of the PSPE and Mr. Blackburn is the new president.** ***On the right,*** **Gen. Groves gives an account of his first-hand experience with the A-bomb.**

Left to right. **At top: John M. Morse, AIA; George S. Troberg (G).*** ***Second row, standing:*** **Frank P. Gray; Peter W. Mourer, Jr; George R. Cooley; Marius Anderson (G); Olaf S. Willumsen; Clarence W. May; Edwin D. Brett (G); Francis E. Huggard, AIA; John O. Johnson; James B. Notkin; Clare Moffitt, AIA; Fred W. Carlson; Roy W. Johnson.** ***Front row, standing:*** **Beverly A. Travis; William K. Stamets; Jefferson P. Miller (G); Marvin S. Patterson; AIA; Carl J. Radin; Frederick E. Cooper; Eric M. Smith; Millard M. Hill; Lloyd N. Robinson; William M. Valentine.** ***Seated:*** **George A. Mussen, Secretary-Treasurer of Seattle Chapter of WSPE. Wallace W. Bergerson, Trustee of WSPE and President of Olympia Chapter. Howard E. Schroedel, Vice-President and Trustee of WSPE, also President of Seattle Chapter. Howard A. Stingle, President of WSPE, and Trustee from Spokane Chapter. Conrad O. Mannes, National Director of NSPE, and Trustee of WSPE from Seattle Chapter. Grover C. Gaier, Executive Secretary of WSPE.**

****AIA designates architects, and (G) guest engineers. Others in Picture are members of WSPE.***

Seattle Chapter Meets With Architects

Prompted by the recommendation of the NSPE Ethical Practices Committee, published in the January 1950 *American Engineer*, the Seattle Chapter of the Washington Society of Professional Engineers recently invited the members of the Washington State Chapter of the American Institute of Architects to attend a panel discussion of Architect-Engineer Relations.

Since this was the first meeting of Seattle architects with the engineering fraternity as represented by WSPE, it was largely a "get-acquainted" affair, and its main theme was exploration of matters of mutual interest.

Mr. John M. Morse, Architect, was the first speaker on the panel. He discussed the architects' need for engineers on modern building projects, and its corollary, the engineers' need for architects on major industrial projects.

Mr. Clarence W. May, Consulting Engineer, then surveyed the subject of fees and responsibilities of architects and engineers engaged on a project, while Mr. Edwin D. Brett, Engineer, presented three topics: co-ordination of the architectural and engineering phases of a project, preparation of plans and specifications, and supervision of construction.

Mr. Francis E. Huggard, Architect, then closed the formal discussion by elaborating on Mr. May's and Mr. Brett's discussions, from the architects' standpoint. The panel discussion inspired numerous questions from the audience, and the ensuing, informal discussion continued for an hour.

Although relatively few architects were present at the luncheon and meeting, their Chapter officers and committees collaborated whole-heartedly in every way. During the discussion, one of their speakers suggested that further joint meetings and possibly seminars might well be held, to resolve problems of mutual interest. They were assured that the Seattle Chapter of WSPE will welcome an opportunity to co-operate whenever the architects wish to sponsor a joint meeting, perhaps in the fall of 1950.

One outgrowth of the meeting is a project for both the WSPE and AIA Chapters to prepare, and to exchange, lists of their respective members who are available for private engagements; the lists to show the field and specialty, if any, of each member, and particularly to indicate whether the member is interested in undertaking relatively small projects. It is believed that such lists will be very helpful to young architects and young engineers, who are starting in private practice, and to newcomers to Seattle in both fields.

Hoosiers Support Engineers For Office; Hear Architect

John R. Swanton, president of the Calumet Chapter, Indiana SPE, reports that the Chapter has adopted a resolution that represents one of the organization's steps in the direction of placing registered engineers in public positions requiring engineering skill.

The resolution called for Chapter members to support the candidacies of two registered professional engineers who had filed in the primary election for County Surveyor. Both were later nominated by their respective parties.

It was also announced by the Calumet group that they sponsored a recent meeting with district architects. The group was addressed by Lawrence B. Perkins, Chicago architect and nationally recognized authority on the design of school buildings.

Mr. Perkins is the head of the Chicago firm of Perkins and Will and is co-author with Walter Cocking of a recently published book on School Design. His firm has designed schools throughout the United States and Mexico, and has been recently engaged to design a school for Hong Kong, China.

Christy Gets New York City Smoke Post

William G. Christy, one-time vice president of the Hudson County Chapter, NJSPE, and former smoke abatement engineer of Hudson County, N. Y., has been appointed director of the Bureau of Smoke Control of New York City by Mayor William O'Dwyer. Christy was sworn in at Mayor O'Dwyer's office at the City Hall.

Christy organized the Smoke Regulation Department of Hudson County and served as head of the department nearly 20 years. Under his direction the smoke abatement work in Hudson County attracted national attention. This work was held up as a model for other communities by the editor of the Woman's Home Companion last year.

In making the appointment, Mayor O'Dwyer followed the recommendation of a committee composed of seven engineers in New York. Walter L. Fleisher, a consulting engineer, 475 5th Ave., was the chairman. This committee was appointed at the request of the mayor by three of the largest national engineering societies to select a director and a deputy director of the New York smoke control bureau. Christy was unanimously selected by the committee from more than 150 applicants from all parts of the country. Rear Admiral William S. Maxwell, retired, of Brooklyn, was appointed deputy director. Admiral Maxwell has a distinguished record in the navy.

In his new position, Christy will be chairman of the Board of Smoke Control of New York City. He will have charge of smoke abatement in all five boroughs of New York. The anticipated budget for smoke work in New York is several times the smoke department budget in Hudson County. Christy will be head of one of the largest smoke abatement bureaus in the United States. He will be the highest paid smoke abatement engineer in the country.

Christy has been in smoke abatement work 25 years. He was the organizer and executive secretary of the Citizens' Smoke Abatement League in St. Louis, Mo., several years before coming to Hudson County. This was the inception of the smoke control work which gave St. Louis national prominence for clearing up what had been termed probably one of the smokiest cities in the country.

Christy is president of the Jersey City Boys' Club, a past president of the Jersey City Rotary Club and a director of the Jersey City Community Welfare Fund. Last year he was national president of the Smoke Prevention Association of America, an organization of smoke commissioners, smoke abatement engineers, smoke inspectors and representatives of industries, railroads, utilities, fuel producers, equipment manufacturers, as well as government officials interested in smoke abatement activities from the United States and Canada.

He is a past vice-president of the Hudson County Professional Engineers Society, NJSPE. Christy was also formerly a national director of the A.S.M.E.

Salina Chapter Receives Charter . . .

Shown above is the presentation of the state charter to the Salina, Kansas, chapter, KSPE. From l. to r.: Al G. Aldridge and Murray A. Wilson, members of the board; Alex Barneck, secretary-treasurer; Walter Johnson, President of the state Society; William F. Ryan, President of the Salina organization; Lester Hagadorn, program chairman; and Leroy Sanderson, vice-president. Murray Wilson is also Past President of the state Society and member of the State Board of Engineering Examiners.

Ohio SPEs Drop Action Against Laska

The Ohio Society of Professional Engineers yesterday asked Common Pleas Court to dismiss the society's suit against George E. Laska, of Toledo.

The society's suit filed two years ago, said Mr. Laska was not a registered engineer and was performing engineering work in the city water division. It asked the court to restrain him.

Guy E. Neeper, secretary of the society's Toledo chapter, said Mr. Laska has resigned the position and is no longer engaging in engineering work.

Need New Members? Why, It's a Cinch...

Below is reproduced a letter as printed in the *New York Professional Engineer,* official publication of the NYSSPE:

You may be interested in the following Short, Short Story:

On March 16, State Headquarters received a coupon from a recent issue of the "New York Professional Engineer," requesting information on membership in the Society. Promptly, that day, the inquiry was referred by phone to Sherwin Wright, P.E., Membership Chairman, New York Chapter. That night, Mr. Wright wrote a letter in reply to the inquiry, forwarding an application blank.

On March 20—just four days later—a completed application card, together with check covering dues for 1950 was returned to Mr. Wright.

Who says it is difficult to get new members?

Editor's Comment—Reply directly to NYSSPE Headquarters.

Ozark Chapter Hear Committee Reports, Talk

Fifty-eight members and guests were present for a recent regular monthly meeting of the Ozark Chapter Missouri SPE, in Springfield.

A report from the committees indicated work being done. The Ethics and Practices and the Building Code Committees reported their action on mal-practices in this area. Mr. R. S. Houge, Chairman of the Registration and National Membership Committee, reported that he has given out seven applications for registration and three applications for membership in the National Society in the last three months.

Dr. L. V. Whitney, Head of the Physics Department of Southwest Missouri State College, gave an interesting and informative address on the subject of atomic energy.

Arkansas Society Works With Students

President Fred J. Herring of the Arkansas SPE, presents award to Harold A. Kelley, senior engineering student at the U. of Arkansas.

Shown are the ninety-three engineering students at the U. of Arkansas who took Arkansas's first Engineer-In-Training examination.

State's First EIT Examination Is Given

Recently 93 engineering students at the U. of Arkansas, took the state's first Engineer-In-Training examination. The examination was given and supervised by a committee of faculty members of the College of Engineering, who are also registered professional engineers. The committee consisted of R. C. Wray, chairman; L. R. Kirby, and G. H. Scott, all members of ASPE, and C. O. Cogburn.

The number taking the examination, approximately 50% of the graduating class, indicates splendid initial acceptance of the Engineer-in-Training program that was initiated by the Arkansas State Board of Registration for Professional Engineers this week.

All students who successfully passed the examination will become eligible for membership as Engineers-in-Training in the Arkansas Society of Professional Engineers.

Later, President Fred J. Herring, PE, of the Arkansas Society of Professional Engineers, presented an award made by the Society, to Harold A. Kelley of Fort Smith, a senior Engineering student at the University of Arkansas. The award is for being an outstanding student in scholarship, attitude, general appearance, professional interest, activities and ability in oral and written expression.

This award was made at the annual Honor Convocation of the University. This is the first year that the Arkansas Society of Professional Engineers have made such an award, and they plan to make it annually in order to stimulate interest among Engineering students in registration and in the Arkansas Society of Professional Engineers.

Phila. Votes Scholarship; Elects Toperzer

The Philadelphia Chapter of the Pennsylvania SPE, has voted to establish a scholarship for five years at the Drexel Institute of Technology, it has been announced. The action was taken at the recent 16th Annual Meeting of the Quaker State group.

Other important business of interest to the near 300 who were present for the affair, was the election of officers. William A. Toperzer was elected president, and Thomas F. Kerney and Allan H. Kidder were named vice presidents. Harry E. Carl was reelected Secretary and George Cook, Jr. was named treasurer. Chapter Directors are Charles A. Glaser, Ralph W. Hoch, and George W. Craemer. Gerhards J. Lanter was named Alternate State Director.

In honor of his distinguished work for the year, Outgoing-President Thomas E. Bruder was presented a suitably inscribed gavel by Past-President Harry R. Halloran.

Other features of the meet included an address by Clarence T. Shoch, State President of the Pennsylvania State Society, and a report on the accomplishments of the Society, by State Secretary John T. West, Jr. West pointed out that the Society has gained greatly in membership and was never in a stronger and more encouraging position.

The following Past-Presidents of the Chapter were introduced to the engineers and their ladies: Samuel J. Sacks, Robert V. Hudson, William G. Bush, John L. Costello, Gerhard J. Lanter, and Harry R. Halloran. Also present were three charter members and incorporators, they were: Samuel J. Sacks, Walter E. Witte and Alfred A. Townsend.

National Society emblems were won by Henry F. Bamberger, John T. West, Jr., George Cook, Jr., and Robert V. Hudson, for introducing more than five new members.

The meeting closed after the drawing of 100 or more prizes for attendance during the year and the serving of buffet refreshments.

Chicago Engineer Heads Electrical Engineers

Election of Titus G. LeClair, Chicago engineer and NSPE member, as president of the American Institute of Electrical Engineers, with more than 33,000 members throughout the world, was announced recently at the opening session of the group's Summer and Pacific General Meeting. The five-day session was devoted to developments in the electrical and allied fields.

Mr. LeClair is assistant chief electrical engineer of the Commonwealth Edison Company of Chicago, and has been active in Institute affairs for many years. He succeeds James F. Fairman, of New York.

An author of many technical papers, Mr. LeClair also has invented several devices used in the electrical industry, including relay schemes, switching schemes, automatic printing meters and special conductors.

At Rhode Island Meet . . .

This photograph was taken during the recent Annual Meeting of the Rhode Island SPE. Shown are, left to right, front row: R. B. Strong, National Director-Elect; E. A. Johnson, 2nd Vice President-Elect; Arthur Mather, Jr., President; Vincent DiMase, President-Elect. Back Row: C. Hirsh, Director; R. A. Phelan, National Director; John King, Secretary; C. E. Blais, Past National Director; G. W. MacKenzie, Director, D. Ionota, Director.

Ryan Speaks On Professional Concepts

William F. Ryan, NSPE Vice President, was the principal speaker before the Annual Meeting of the Rhode Island SPE, held recently in Providence.

He spoke on orientation and development of the professional viewpoint, and said that this can best be accomplished through a close personal relationship with the older engineers.

Mr. Ryan pointed out that a great majority of student engineers, even the seniors, are ill-informed on registration. They were not acquainted with the Canons of Ethics for Engineers, and had no conception of why a profession requires a code of ethics. He compared the professional indoctrination of medical students and engineering students, stating that from his freshman enrollment to graduation, when he takes the Hippocratic Oath, the medical student is imbued with the concept of professional responsibility. The ideals and ethics of his calling are as much a part of his education as the principles of biology and anatomy. He recognizes his professional standards, in the words of our own Canons of Ethics, as a set of dynamic principles guiding his conduct and his way of life. Many of the present problems of the young engineer; and, in fact, of the entire profession, Mr. Ryan said, would evaporate if engineering students were similarly indoctrinated. He recommended approaching the problem through faculty members who have expressed their own interest in the professional aspects of engineering.

Mr. Robert C. Scott, President of the Providence Engineering Society, spoke on the healthy friendship that exists between RISPE and the Providence Engineering Society and expressed the hope that the two societies would work together even closer in the future.

The Annual Meeting was held following the dinner. The report of the tellers on the election of officers for the new year was made by George Geisser, Chairman, and the new officers are as follows:

President—Vincent DiMase

1st Vice President—Frederick H. Paulson

2nd Vice President — Bertil A. Johnson

Secretary—John W. King

Treasurer—Joseph Wuraftic

Nat. Director—Robert B. Strong

Director for 3 yrs.—Captain Hunt V. Martin, John E. Harvey, George W. MacKenzie

The new President was installed by Vice President William F. Ryan.

Chipp, NYSSPE, Heads Radio Engineers

The Institute of Radio Engineers, at a meeting held in New York, Wednesday (June 7th), elected Rodney D. Chipp as Chairman of the New York Section for the 1950-51 season.

Mr. Chipp, who is director of engineering for the Du Mont Television Network, and a member of the New York SSPE, previously held other Institute offices.

Atlanta Chapter Drives For New Members

A drive for new members for the Georgia Society of Professional Engineers has been started by the Atlanta Chapter, according to an announcement by Eugene M. Clary, Chairman of the Atlanta Chapter membership committee. The objective of the drive is to double the number of present active members.

The Atlanta Chapter members will be divided up into teams headed by the various members of the membership committee. The quota of new members to be obtained by each team will be the same as the number of men on the team. In other words, it is hoped that each member will bring in one new member.

Chairman Clary states that the names of members who obtain new members will be printed in the Professional Engineer under the heading "100 percenters" for one new member; "200 percenters" for two new members, etc.

A list of men eligible for membership in G. S. P. E. has been distributed among the Atlanta members.

Business Manager Before Ft. Worth Group

The March meeting of the Fort Worth Chapter, TSPE, was held in the Conference Room of the Tarrant County Health Center.

The president read a letter regarding the next State meeting to be held in Mineral Wells. It was suggested that the Fort Worth Chapter join with Abilene in sponsoring the meeting. In the discussion it was mentioned that Wichita Falls be asked to join Fort Worth and Abilene as co-sponsors.

A telephone committee consisting of the following was appointed: Blan Bell, Joe Rady, Marvin Nichols, Frank Payne, Frank Clayton, Frank Jackson, Walt Sindt, and Glen Foster.

The meeting was turned over to Vice President Sindt, who introduced the speaker of the evening, Mr. Ed P. Williams, business manager of the Fort Worth Public Schools, who spoke on the subject, "Your School District from a Business Manager's Viewpoint."

P.E.N. Now Has Circulation of 3,000

With the June issue of P.E.N., official publication of the Detroit Chapter, MSPE, it was announced that circulation of the new publication had been increased to over 3,000 to include the entire roster of registered engineers in Michigan.

New Michigan Chapter Planned

An organizational meeting of a Blue Water Chapter of the Michigan Society of Professional Engineers was held recently in the conference room of the Detroit Edison Company in Port Huron.

Arthur F. Plant, president of the Michigan society, outlined the policies and duties of the society and discussed legislation affecting the profession.

Donald E. Trefry, Detroit, director at large of the Michigan society, outlined requirements for formation of a new chapter.

Arthur L. Lane, district agent of the Detroit Edison Company in Port Huron, was appointed temporary chairman of the local chapter. Howard L. Canfield, assistant manager of the Edison Company, was appointed temporary secretary and treasurer.

Others attending the organizational meeting were G. F. Durand and B. C. Dickey, Port Huron Sulphite & Paper Co.; F. A. Grist, Dunn Paper Company; A. G. Drummond and R. W. Berta, Detroit Edison Company; R. S. Brand and E. W. Moore, Brand Electric Company, St. Clair; H. B. LaFrance, Michigan State Highway Department, Lansing; Allan T. Carlisle, Port Huron City Engineer; Glen Whitmore, Whitmore Engineering Company, and R. A. Cosgrove, Marysville City Engineer.

An estimated 35 other professional engineers in the area are eligible for membership.

Columbus, Ga., Chapter Hear Public Relations Talk

The Columbus Chapter of the Georgia Society of Professional Engineers held a dinner meeting in Columbus, Georgia, recently, with President Oscar L. Betts presiding.

Burton Bell, Public Relations Officer of the United States Corps of Enginners, Atlanta, described the work being done by the Engineers in Georgia—including the progress on the work on the Jim Woodruff Dam on the lower Chattahoochee River, near the Florida State Line; that of the Clark Hill Dam, on the Savannah River, about 25 miles above Augusta, Georgia; and the Allatoona Dam, on the Etowa River near Cartersville.

Following the description of this work, Mr. Bell showed a technicolor film of the Intracoastal Waterway (Inside Route) from Norfolk to Key West, which depicted most vividly this 1250-mile strip of navigable water with its extensive beauty, and intriguing history.

Honored...

Carl E. Schmitz

Schmitz V.P. of Lubrication Engineers

Carl E. Schmitz, Vice-President and Director of Engineering, Crane Packing Company, Chicago, and a member of the Illinois SPE, was elected Vice-President-at-Large of the American Society of Lubrication Engineers at the annual convention just concluded in Detroit.

Mr. Schmitz was previously Treasurer and Regional Vice-President of the organization. His other current activities include chairmanship of a subcommittee on Engine Design for the Society of Automotive Engineers and membership on the conference committee of the National Conference on Industrial Hydraulics.

Calif. Society Heads Meet In Fresno

Officers of the California SPE, the Board of Directors, and several members of the Los Angeles Chapter, met recently in Fresno to discuss Society activities.

The meeting, under the direction of President John Trebilcock, considered several matters concerning competitive bidding, point four, and the like.

The officials also went on record to support the appointment of member Fritz Zapf to the Planning Commission of the City of San Diego.

Ohio Society Hears Talk By Public Relations Expert

"The Ohio SPE, or any professional organization, which can master five basic essentials will be able to succeed in any organizational venture," Robert Olds, Columbus public relations counsel, told the Ohio Society's chapter presidents and secretaries conference recently.

Speaking at a luncheon, Olds listed "five essential P's for professional progress" as being: 1. A feeling of purpose or "team spirit" by the general membership as well as officers. 2. Putting *all* principles of the organization into action. 3. Effective planning by officers at all levels. 4. Maximum participation in activities by members. 5. Continual promotion, selling and re-selling the organization to the membership and the public.

Olds, a specialist in association public relations problems, attributed widespread professional interest in public relations to "a growing awareness by leaders that the internal strength and external development of an organization depends upon good human relationships."

"Public relations is simply human relationships," he said.

Although all professional groups have lofty principles, including "in spirit if not the letter, the Golden Rule," too often the "gimme" or self-interest principles dominate the thinking of an association.

"The motto of the forward-looking professional association should be 'How best can we serve in order to receive,'" the public relations man said.

OSPE, he said, shows evidence of being "out ahead of many organizations so far as planning is concerned," adding that engineering minds had apparently made the Society particularly conscious of this essential.

The Society's promotional program, he said, probably is OSPE's "weakest spot, particularly because you've got a very big job."

He urged careful selection of promotional techniques, using "a rifle rather than a shotgun" in publicity methods.

Television, he said, is likely to prove "the most important medium of all" for professional organizations. Through TV, he explained, a professional group can, for the first time, reach a mass audience with a medium which combines sight, sound and motion.

Water Pollution Theme of Wisconsin Engineers' Confab

Seventy area members and a half dozen guests attended a recent meeting of the Southwest Chapter, Wisconsin SPE.

Guest speaker, Theodore F. Wisniewski, chapter member and Director of the State Commission for the Control of Water Pollution, spoke on the work of the Commission. Wisniewski told of the progress made since the state began pollution control in 1925, stating that today Wisconsin's paper mills have the lowest fiber loss in the industry. Paper fibers lost through water waste are an element in stream pollution and also represent loss of revenue to the mills, thus the low rate achieved in Wisconsin has brought industry experts into the state to study how it was achieved here.

At another recent meeting, the program was in charge of the Committee on Education. Proposed changes in the various curricula of the several departments of the U. of W. College of Engineering were reviewed by the department heads. The new curricula tend to stress fundamentals, report writing and the inclusion of the Humanities while shop drawing, etc. are to be reduced.

Engineer Week Celebration Enjoyed In Green Bay

A Fox River Valley Chapter (Wisconsin SPE) committee consisting of Joseph Gehrke, Chairman, Berry Brevich, Don Kutchera, William Mitchell, Harold Trester and Clarence Zachow, arranged a special Engineer Week Celebration meeting at Green Bay recently. Chairman Gehrke discussed ideas developed to date and cited Oklahoma Governor Turner's December 1947 Proclamation on their Engineers Week, as an example of what has been done.

Mr. Gehrke then went on to give an interpretation entitled, "Achievements Deserve Recognition" in which he recommended that the State Society again be approached regarding efforts to get the governor to proclaim an Engineers' Week for the State. This would assist the Professional Engineers to window display in the larger cities, give radio programs and talks before civic clubs and promote newspaper publicity to make Wisconsin engineer-conscious. The week including Washington's birthday in keeping with the national date, was selected as their choice. Assisted by the Governor's proclamation the members of WSPE could go to work with a will on a campaign to acquaint the people of Wisconsin with the meaning of the term Professional Engineer.

Hundreds of window displays in the business districts of all larger cities, dozens of radio programs and talks before civic clubs and countless inches of newspaper publicity could make Wisconsin engineer-conscious, it was pointed out.

Traffic Problems Subject of Meeting

The Detroit Chapter MSPE, was addressed by Alger F. Malo, the Traffic Engineer of the City of Detroit, at a recent meeting.

Mr. Malo gave an interesting talk on Detroit's traffic problems. He outlined the organization of his department and their methods of dealing with these traffic problems. His illustrated charts and statistics covered the flow of traffic on many of Detroit's busiest streets.

It was pointed out that Detroit, because of its peculiar layout in the form of a half wheel, has several of its main arteries for which no parallel routes are possible. This makes for an exceedingly complex problem in attempting to alleviate peak traffic loads. However, with the construction of super-highways, the utilization of improved and flexible signal equipment and the development of increased parking facilities, the Traffic Engineer hopes to make movement easier and more convenient.

Marion, O., Chapter Hears Turnpike Talk

The May meeting of the Marion Chapter, Ohio Society of Professional Engineers, was held in Delaware, Ohio, on the 8th.

Mr. C. P. Smith of the State Highway Department discussed the "Ohio Turnpike."

Zamjohn Lectures On "Road to Russia"

Carl L. Zamjohn, of Utica, New York, and a member of the Monroe County Chapter, NYSSPE, gave an illustrated talk on "The Road to Russia through Iran," at a recent meeting. The talk covered the life, customs, industry, agriculture and geography of Iran showing how an entire nation of 12,000,000 people are living today in the same manner as they have for thousands of years past. This was the 63rd presentation of this talk which has been given before to service clubs, engineers and construction groups throughout the state.

Mr. Zamjohn is Zone Director for Zone 7, and a member of the Executive Committee of the State Society. He is a graduate civil engineer, class of 1930 at R.P.I. He was an engineer in the Binghamton District of the N. Y. State Department of Public Works from 1930 to 1938. From 1938 to 1942 he was Bridge Engineer for the Oneida County Highway Department. During the war he was commissioned a Captain in the Corps of Engineers and spent 26 months with the Russians in the Persian Gulf Command.

It was the job of the Engineers to build the 640 mile road from the Port of Khoramshahr on the Persian Gulf to the Russian Zone at Tabriz. They also built all the facilities to accommodate the 28000 troops engaged in this enterprise. Transferred to the European Theater of Operations in 1944 his regiment finished out the war building bridges across the Rhine, the Neckar and the Danube Rivers.

Dinner-Theater Party Entertain Seattle Chapter

A dinner-theater party recently furnished an evening's entertainment for the Seattle Chapter, Washington Society of Professional Engineers.

The meeting held in Seattle, was arranged by John O. Johnson. Steve Batori served as host, and Mrs. Howard Schrodel, was hostess.

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Southern Nevada Section Meets In Henderson

A dinner meeting of the National Society of Professional Engineers, southern Nevada section, was held recently in Henderson, Nev.

A short business meeting followed dinner and reports were heard from committee chairmen. J. H. Buehler, president of the Nevada society, and R. T. Campbell, secretary, discussed their recent trip to Nashville, Tennessee, where they attended the presidents and secretaries conference held annually by the society.

Buehler said that he was constantly reminded on his trip to the greatness and importance of the engineering profession by the innumerable new structures, such as buildings, bridges and dams he passed while en route. He pointedly remarked that nothing he saw along the 5,000 circle trip served as a monument to any other profession. Certain highlights of the conference were then presented by Buehler and Campbell. Subjects such as public relations, guidance to student engineers and the need for universal awareness of the true professionalism of engineers were stressed.

T. C. Cowart, chief of party, United States coast and geodetic survey, was the guest speaker, and he told the group how the USGS was organized in 1807 and that the national survey program was now being carried on by three main parties consisting of 19 men each. The object of the surveys now in progress in this area, he said, was manifold, some of them being: to provide accurate benchmarks for use in subsequent surveys to be conducted for contour and geological mapping to determine the settling and rising of the general terrain which is of great importance and interest to science and engineers connected with geological work and future dam site studies.

Cowart also gave a brief but detailed description of the equipment and instruments used in this work and also of the precise methods employed to obtain the required accuracy.

Odessa, Texas, Chapter Hears H. H. Offutt

H. H. Offutt spoke on "Operation of Carbon Black Plants" to the March meeting of the Odessa TSPE. Mr. Offutt discussed the different processes that take place in the production of carbon, and gave some of the background information on types of carbons.

Floridians Discuss Local Projects

A regular meeting of the Lakeland Chapter of Florida Society of Professional Engineers was held recently at Lake Wales, Florida. After an enjoyable dinner, the meeting was called to order by President Drew.

After the reading of the minutes and a discussion of The Proposed Florida Gas Line, President Drew opened the meeting for new business.

Mr. Cowden, program chairman, led a group discussion covering the proposed Polk County Health Center to be constructed in Winter Haven, Florida. Drawings of this structure were examined by the group and much interest was shown in the project.

Mr. Henry Lewis led a discussion of the methods followed by the local Highway department in preparing their personnel for the Florida Registration Examinations. Members from the Phosphate Industry were interested in this discussion, as they have several employees who expect to apply for registration.

All members present participated in a discussion of the need of more Professional Engineering advice in the Citrus Industry.

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What They're Saying

(*Continued from page* 18)

Moreover, commencing 40 to 50 years ago, educators began to realize the need of formal preparation for the general field of business and industry. Courses in Commerce and Business Administration commenced to be offered in college curricula. Just as the courses in engineering were based on science and mathematics, so the courses in commerce and business administration were based on economics and finance.

The question arises as to whether the head of an engineering firm, the city engineer of a large municipality or the chief engineer of a large industrial concern, functions differently from the head of a fair sized bank, who has completed a course in business administration, majoring in banking and finance, and acquired further knowledge and judgment through experience. If the engineer is considered to be a professional man, it would seem that the banker, the insurance executive, the head of a manufacturing concern, or any other person with comparable education and experience in the field of business or industry should likewise be called professional.

On the other hand, the head of an engineering organization, like the president of a bank, does not function in the same way as do doctors, lawyers, accountants or those in such more recently developed fields as public relations counseling and advertising counseling. The consulting engineer, however, does so function, since he renders services essentially of a personal character.

It would seem that a choice must be made. If the difference between a profession and a business is considered to consist in the amount of formal education, knowledge and experience which the practitioner must have, then any calling that requires such specialized knowledge and preparation, even though essentially in the field of administration, is a profession. On the other hand, if the distinction between a business and a profession lies in the manner in which the practioner functions, the degree of personal service which he renders, and the personal responsibility which he accepts, then neither the head of an engineering concern, nor even his top employees can be considered professional men —no more than can executives in the banking, insurance or industrial fields. This is an age of specialized knowledge, and some serious thinking on this subject is indicated.—*Civil Engineering, March*, 1950.

INDIA ON ITS OWN . . .

Dr. B. N. Dey's Address, Chairman, India Society of Engineers, at the Inauguration Ceremony at Coimbatore of the South India Regional Centre of the India Society of Engineers.—Editor.

I am thankful to Mr. G. D. Naidu for the invitation extended to me to come to Coimbatore and co-operate with you in the inauguration of the South India Regional Centre of the India Society of Engineers. The occasion augurs well for the well-being of our country now in the throes of regeneration and reorganization. For, the organized work done by the Engineers and those they direct—through Societies, Associations and Institutions of Engineers—is of paramount necessity and importance for the country's stability and safety as well as its economic sufficiency. The India Society of Engineers can therefore be of useful and essential service in the cause of India's rehabilitation.

We have been heavily handicapped in the past, having allowed ourselves to drift into dependence on outside direction. Because, while India laid dormant and let her skilled talent die out or stagnate, the Western Countries encouraged, pushed and drove their indigenous talent to energetically evolve the technique known as "modern." India not having such live and brilliant background of modern technique suffers miserably in consequence.

Unlike other countries, poor India has had a confused start and therefore has lagged behind the other countries who took up modernization. India was made to depend on the foreign engineer to do her engineering. To make matters worse, the alien engineer was also a "bird of passage." How could he therefore be normally expected to feel with the people their requirements, their resourcefulness, their shortcomings, their abilities and thus lead them as a natural leader, born, domiciled or naturalized in the country, could only do?

The confusion was worse confounded by the wrong way the Indian youth was trained in engineering. The limitations of learning the fundamentals through the medium of a foreign language gave him a poor start. Then he was told at school, at college, at home and abroad, alike by his own folks and by the foreigners, that India could lead in everything except in engineering. He, therefore, accepted it as inevitable that engineering leadership was a close preserve of the foreigner.

Thus India could not make much headway even after the foreign engineer was replaced by the Indian Engineer by the process called "Indianisation." Being segregated from his kindred of the soil in his youthful days of training and afflicted with an inferiority complex, the poor Indian engineer thought it safe and wise to follow in the foot-steps of his foreign predecessor. His mental equipment sadly lacked the touch of reality and originality. The direction continued to come from outside instead of emanating from inside.

In the circumstances the duty of the India Society of Engineers is clear and their responsibility onerous. Their work is necessary to further the cause of engineering in India. Like other technical institutions of the progressive nations, the India Society of Engineers must weld together the efforts of engineers scattered all over India and thereby make India forge ahead and take her rightful place among her worldly neighbors.—*From Science and Engineering, Calcutta, India.*

Group Exploring Professional Unity Releases Report

(*Continued from page* 21)

lows:

A. Expand and modify the present Engineers Joint Council so that the members of a larger number of engineering societies would be represented and so that representation would be, to some extent, in proportion to membership.

B. Expand and modify the present National Society of Professional Engineers with the understanding that the existing engineering societies cooperate by urging their members to join and by referring to that Society items of a broad general nature which the Society is in a position to handle.

C. Modify the National Society of Professional Engineers so that registration is not a requirement for individual membership, modify the Engineers Joint Council as in Item A, and combine the NSPE Board of Directors with the EJC to form a single governing body.

After a full discussion the entire matter of preparing a further comparison of possible plans and a consideration of the questions on which agreement had not been reached was referred to the Planning Committee for study. It is expected that the next report of the Planning Committee will be made to the Exploratory Group shortly after the summer vacation period.

The Professional Engineer and the National Income

(*Continued from page 9*)

Thus we have an indicated increase in productivity per man-hour of 14 per cent which may be attributed to an improvement in efficiency of the combination of men and machinery; how much to each may be guessed.

We also learn from the foregoing that there is no magic in the picture; that to have a better living we must work for it; that the objective to be sought is not an ever-increasing dollar wage for everyone, but more and better production facilities and full employment.

So now let us look into the record for information as to what happens to the National Income; how it is distributed among the people.

Distribution

What happens to the National Income? How is it distributed? Has the pattern of its distribution been changed by the "New Deal"?

It has been well known for a long time and in a general way that there is a pattern in the manner by which the National Income is distributed between the smaller number of people in the higher brackets and the larger number in the lower brackets. It has been assumed by many people that the incomes of the "rich" are relatively less than they were in years past. After payment of their income taxes this is true beyond any question. Before the tax, however, it appears to be more than doubtful.

The evidence seems to be conclusive that no matter what the size of the "pie" a given number of individuals in the uppermost income bracket are bound to receive a fixed proportion of the total.

This is not to say that each bracket is composed of the same people, not by any means. Over the recent years the wage earner has moved up the scale and the pensioner has moved down. Likewise the wage earner in overalls has improved his position at the expense of the schoolteacher. But the pattern remains unchanged.

What is this pattern in which the National Income persists in being distributed? From a study of the statistical data for the years 1932 to 1940 it was discovered by this author that a logarithmic plotting of the statistical data for each of the years tended very definitely to follow the path of a straight line, all the lines tending definitely to be parallel; the relative height of each line being governed by the total amount of the income distributed to individuals. Such information as we have for the year 1948 appears to follow the same pattern.

The slant of these straight lines was expressible in a mathematical statement that the average income of the top 1,000 is approximately 3.5 times the average of the top 10,000 which is 3.5 times the top 100,000 and so on. According to this formula, the total income of the top 10 million is very close to the equal of the next 40 million, or four times the 40 million average.

The foregoing comparison between the incomes of the top 10 million and the bottom 40 million may encourage the conclusion that a leveling process would be desirable. The implications of such a conclusion call for scrutiny. Taking a hypothetical case, in harmony with the year 1948, we might have the following:

	Individual Incomes	
Individuals (Millions)	*Average* $	*Amount ($ Billion)*
10	$7,500	$75
40	1,875	75
50	$3,000	$150

A complete leveling process for the 50 million individuals, according to the foregoing tabulation, would produce an income of $3,000 for each individual; but let us see how many, among the 50 million, now receive $3,000 or more and how many receive less.

	Income Bracket		*Average*	
Individuals	*Low*	*High*	*Income*	*Amount*
100,000	$53,000	and over	$91,500	$9,150,000,000
900,000	12,500	$53,000	18,800	16,950,000,000
1,000,000	$12,500	and over	$26,100	$26,100,000,000
9,000,000	3,560	12,500	5,380	48,450,000,000
10,000,000	$3,560	and over	$7,455	$74,550,000,000
10,000,000	2,210	$3,560	2,445	24,450,000,000
10,000,000	1,800	2,210	1,950	19,500,000,000
10,000,000	1,580	1,800	1,665	16,650,000,000
10,000,000	1,420	1,580	1,485	14,850,000,000
50,000,000	$1,420	and over	$3,000	$150,000,000,000

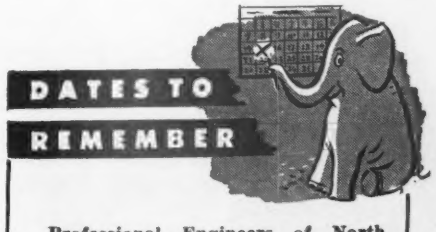
From the table it will be seen that the position of the $3,000 man, in the descending scale of income rates, is somewhere in the second 10 million:

A plotting of the curve of descent, which is a logarithmic straight line, indicates that the position of the $3,000 income is very close to the 14 million point, indicating that in reality he is a member of the "upper crust," that the leveling process would leave him where he is, would injure less than 14 million people above him, and, theoretically, benefit more than 36 million below him.

But the lower 36 million would not benefit in fact. The nation would be compelled to terminate its progress and address itself wholly to the production of consumption goods, for such a process, even if it were possible, would put an end to the formation of new capital. We know that new capital will not be voluntarily supplied by a mass of people who have no incentive to improve their economic position. It would have to be accomplished, of course, by a communistic program and we now know that the communists themselves have discovered that progress requires incentive and that the leveling process simply does not work. So that even under communism we have the varying brackets of income from high to low. There is this difference, however, that under communism the high brackets are occupied by successful politicians rather than successful business men.

Taxes

Our inquiry has led us to the conclusion that attempts to meddle with the natural distribution of the National Income are destined to be futile. The relative share of one class of people can be increased but only at the expense of some other class.



Professional Engineers of North Carolina—July 27, 28, 29. George Vanderbilt Hotel, Asheville, N. C.

West Virginia Society of Professional Engineers—Sept. 1, 2. Greenbrier Hotel, White Sulphur Springs.

The result, in its broad economic aspect remains the same.

It is possible, however, at least for some period of time, to accomplish the leveling objective by the process of unequal taxation. If, by this process, the funds available for the formation of new capital are unduly reduced it becomes a matter of vital interest to all who are primarily engaged in the capital goods industries, such as the building trades and, even more especially, to the professional engineer.

The professional engineer, if well informed, is well aware of the economic requirement that the increase in the capacity of the nation to produce is accompanied by a necessity that there be a market for the increased volume of production. In other words, there must be a balance between the spending for consumption goods and the investment in capital wealth.

There is a temptation, at this point, to conclude that the accomplishment of such a balance, between spending and investment, requires the centralized management of some powerful agency of government. A little unprejudiced reflection, however, will lead to the more realistic conclusion that no man nor any group of men, now or ever, will be able to devise an artificial economic program that will cancel the natural law of supply and demand. The balance we seek can be attained only by measures that are in harmony with that law and not opposed to it.

In the past, when the activity in the capital goods industries has outstripped the capacity or willingness of the consumers to purchase the increased product, it has been the signal of an impending period of involuntary idleness and business depression.

Oddly enough there are made, at such times, two explanations for this recurring phenomenon which appear to be diametrically opposed to each other.

It is alleged, on the one hand, that the crisis has arisen because the investors have been demanding too much while the workers have received too little, thus curtailing the mass purchasing power. On the other hand, it is charged that the cost of the product is excessive because of excessive wages and that the product can not be sold at a price sufficient to cover the cost.

Either of the foregoing allegations may have merit in a given situation and sometimes both of them, but it stands to reason in each of such situations that the way is open to both Capital and Labor to cooperate in solving, between themselves, the problem of producing the product at a price at which it can be sold. It is not a case of either the employees or stockholders of a company having sufficient wages or dividends to enable them to buy their own product but of setting a price at which the employees or stockholders of other companies will buy it. It must not be forgotten, moreover, that stockholders, as well as employees, are consumers. It also merits mention that stockholders are likely to be better customers for steel companies and automobile manufacturers than employees; while the reverse may be true in those industries which produce low cost consumer goods.

As a statistical matter, the plotting of the theoretical tax obligation against the net incomes in the lower taxable brackets leads to the inescapable conclusion that the taxes actually collected from these lower brackets is less than the amount due by a startling margin. Millions of our people are apparently deriving a benefit by tax evasion at the expense of their neighbors.

On the other hand, it appears that the top million incomes are reduced by taxes reaching 90 per cent, at an average not far from 50 per cent. These top taxes produce something like one-third of the total taxes collected but the punitive effect of this excessive levy may be far more damaging to the National Economy than the beneficial effect on the great mass of taxpayers in the brackets below.

A closing of the indicated tax leak in the lower brackets coupled with a reasonable reduction in the rates applicable to the top brackets would result in a net increase of very substantial proportions in the total amount collected by the Government.

All of which should be of sufficient significance to the professional engineer to stimulate his interest in this subject and his desire to bring it to the attention of those who represent him in Washington.

UNESCO Develops 'Challenging' Program

A "more challenging" program in UNESCO's broad fields of education, science and culture is the objective of the U. S. Delegation which is en route to the Fifth General Conference of the international organization in Florence, Italy.

The Delegation, which left New York on the "Queen Mary," May 9, 1950, is headed by Howland H. Sargeant, Deputy Assistant Secretary of State for Public Affairs, as chairman. The vice-chairman is George D. Stoddard, president of the University of Illinois and chairman of the U. S. National Commission for UNESCO. Other members are leaders in education, the sciences, arts, national organizations and mass communications.

"The U. S. Delegation to the UNESCO Conference believes that the immediate task of UNESCO is to concentrate on major projects which will make the most effective contribution to peace and security throughout the world," said Mr. Sargeant.

"I am speaking of such projects as education and information to win observance of 'Human Rights,' to which UNESCO could give meaning by calling for self-examination by all nations. I am speaking of attacks on barriers to the free flow of information; reduction of the barriers to educational exchanges, both of persons and materials; condemnation of the jamming of radio channels, denying the right of people to listen to the broadcasts they choose. And I am speaking of the probing of the tensions, antagonisms and fears which are so prevalent today and which inevitably contribute to war.

"UNESCO leaders in the U.S. go further. The U. S. National Commission for UNESCO recently called upon UNESCO's Director General 'to develop over and beyond the regular program of UNESCO certain extraordinary projects capable of making a large-scale contribution to world peace and security'."

Groves Interview

(*Continued from page 7*)

any newspaper and you will see what our people are being taught to believe. The United States as a nation has tremendous strength, but some of our political leaders and writers are doing their best to destroy the confidence of the people in our great country—either consciously or unconsciously. For example, they try to undermine confidence in our military leadership with petty after-the-fact criticisms, I hope that that undermining will never prove to be our undoing. It is up to all of us, and the professional engineer is not exempt, to do all we can now to leave a better country to posterity than was turned over to us. To accomplish this, we need men with three essential qualities, and we don't have many of them. I speak of courage, integrity, and intelligence.